The new name for COMPUTING WITH THE AMSTRAD CPC

Vol. 4 No. 12
December 1988
£1.25

CPC COMPUTING

A DATABASE PUBLICATION

Switch on to C

LISTINGS

File copying made easy
Solve Rubik's Clock
Play Santa's Dungeon

GAME REVIEWS

- Big Screen Hero
- Hercules
- 1943
- Off Shore Warrior
- By Fair Means or Foul
- Night Raider
- GM Chess
- Game Over II
- Lancelot

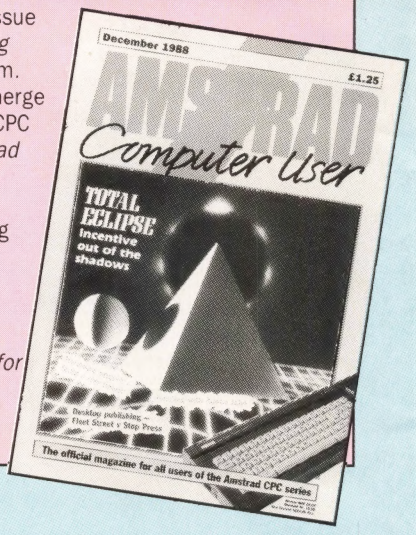
PLUS CP/M programming revealed

Contents

CPC COMPUTING

It's goodbye . . . and hello!

This is the last issue of *CPC Computing* in its present form. Next month we merge with the official CPC magazine, *Amstrad Computer User* – combining our resources to bring you the biggest, best, most informative CPC magazine ever! *Turn to Page 53 for news of a great money-saving offer!*



FEATURES

5 NEWS
Read all about it! All the latest releases, events and happenings in the Amstrad world.

24 CP/M TUTORIAL
Follow our expert advice on getting started in machine code CP/M programming, and you'll be able to write your own CP/M utilities.

32 DELIGHTS OF C
Basic and machine code aren't the only games in town. So read about the pros and cons of taking up the language that professional programmers are raving about. It may be just what you've been waiting for.

59 POSTBAG
Your forum for feedback – air your views and opinions, and ask or answer questions.

REVIEWS

7 GM CHESS
With Camel Micros' chess program budding grand masters can cross swords with their CPCs. We see how it measures up.

29 GO FOR GOLD
Four products from Goldmark Systems come under scrutiny, including a stockmarket simulation and a character definer.

35 PRODUCT UPDATE
We bring you news of enhancements to two packages reviewed recently – CP/M Plus on rom and accounting for the small business.

LISTINGS

9 RUBIK'S CLOCK
With this easy-to-use program you can solve the fiendish puzzle which'll be in every home this Christmas.

Tel: 0625 878888 (All depts.)
MicroLink/Telecom Gold: 72:MAG001 **Fax:** 0625 879966
Prestel Mailbox: 614568383. **Telex:** 9312188888 DB

Published by:
Database Publications Ltd,
Europa House, Adlington Park,
Adlington, Macclesfield SK10 4NP.

Managing Editor, **Derek Meakin**. *Group Editor,* **Alan McLachlan**. *Features Editor,* **Ian Sharpe**. *Production Editor,* **Peter Glover**. *Associate Editor:* **Roland Waddilove**. *Editorial Assistant,* **Phil Lawson**. *Promotions Editor,* **Christopher Payne**. *Reviews Coordinator,* **Pam Turnbull**. *News Editor,* **Mike Cowley**. *Advertisement Manager,* **John Snowden**. *Advertising Sales,* **Jane Conway**.

Amstrad Computer User welcomes program listings and articles for publication. Material should be typed or computer-printed, and preferably double-spaced. Program listings should be accompanied by cassette tape or disc. Please enclose a stamped, self-addressed envelope, otherwise the return of material cannot be guaranteed. Contributions accepted for publication will be on an all-rights basis.

© 1988 Database Publications Ltd. No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles, listings or advertisements.

Enquiries relating to Amstrad Products: Tel: 0277 230222.

CPC Computing is an independent publication and Amstrad plc is not responsible for any of the articles in this issue or for any of the opinions expressed.

News trade distribution: Europress Sales & Distribution Limited, Unit 1, Burgess Road, Ivyhouse Lane, Hastings, East Sussex TN35 4NR. Tel: 0424 430422.

Database Publications is a division of Europress Ltd.

11 FILE COPIER
Now you can copy disc files under Amsdos, even with a 5.25in high-capacity drive.

22 10 LINERS
Graphics and games: More short programs where readers show what they can do in 10 lines and win up to £10.

26 SCRIBE
Design a mini adventure, and this superb utility will turn it into a working program.

55 SANTA'S DUNGEON
Can you save Santa from being blown up, stabbed in the back and starved to death?

GAMES

14 CPC ARCADE
- *The Games, Winter Edition*
- *Off Shore Warrior*
- *Big Screen Hero*
- *Sabian Island*
- *Game Over II*
- *Night Raider*
- *Hercules*
- *1943*

39 ADVENTURES
Our resident wizard Gandalf provides hints, tips, solutions and feedback for fellow sufferers, plus a map of Jinxter.

44 ADVENTURE REVIEW
Level 9 is making a bid to be top UK adventure house with Lancelot. Gandalf mounts his trusty steed to give a verdict.

48 QUEEN OF CHEATS
Tiffany brings you pokes and tips for games new and old including Pro BMX Simulator, Skateboard Kidz, and Metal Army.

Gallup Software Chart

Seven new and re-entries this month – just in time for Christmas, too. Top of the poll is the arcade conversion of Bombjack. The sequel to Joe Blade enters in second place and is excellent value.

THIS MONTH	LAST MONTH	TITLE (Software House)	PRICE
1	10	BOMB JACK *Encore*	1.99
2	•	JOE BLADE 2 *Players*	1.99
3	•	DALEY THOMPSON'S OLYMPIC CHALLENGE *Ocean*	9.95
4	•	KIK START 2 *Mastertronic*	2.99
5	1	AIR WOLF *Encore*	1.99
6	7	GAUNTLET *Kixx*	2.99
7	8	YOGI BEAR *Alternative*	1.99
8	•	ACE OF ACES *Kixx*	2.99
9	•	ADVANCED PINBALL SIMULATOR *Code Masters*	1.99
10	5	FOOTBALL MANAGER 2 *Addictive*	9.99
11	12	EUROPEAN FIVE-A-SIDE *Firebird*	1.99
12	3	BATTLESHIPS *Encore*	1.99
13	17	FRANK BRUNO'S BOXING *Encore*	1.99
14	2	ATV SIMULATOR *Code Masters*	1.99
15	4	STUNT BIKE SIMULATOR *Firebird*	1.99
16	16	SUPER STUNTMAN *Code Masters*	1.99
17	•	BATTLE VALLEY *Rack-It*	2.99
18	11	OUT RUN *US Gold*	9.99
19	•	GHOSTBUSTERS *Mastertronic*	1.99
20	14	STEVE DAVIS SNOOKER *Blue Ribbon*	1.99

Learning has never been such fun!

DATABASE EDUCATIONAL SOFTWARE

fun school 2

A computer is an ideal teaching tool for young children – if you have the right software.

Fun School 2 is available for three age groups: Under-6s, 6-8 years and Over-8s. Each pack consists of eight colourful and exciting programs carefully designed by a team of educationalists.

The computer itself monitors the child's progress. The skill level – initially set by parents – is automatically adjusted to suit the child's ability.

Now children can enjoy using their parents' computer while they learn at their own pace.

You can give your children an unfair advantage with Fun School 2 – it's the ideal way to introduce youngsters to the joys of using computers.

Detailed instructions are supplied with each pack giving educational help to parents and teachers, together with full instructions for each program.

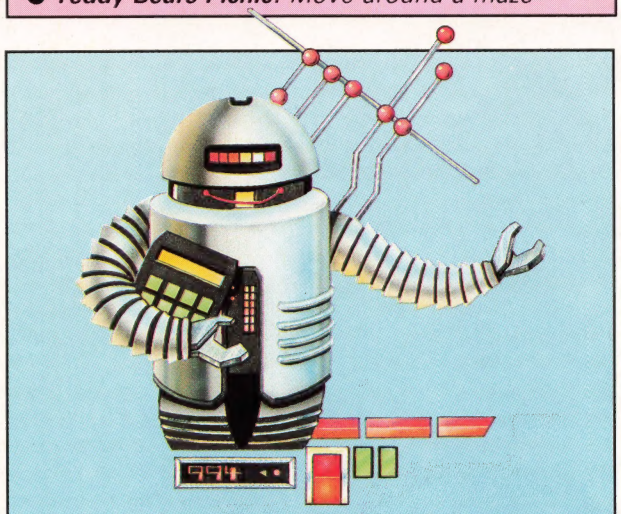
A colourful button badge with each package!

Fun School 2 for Under-6s contains:

- ***Shape Snap:*** *Colourful shape recognition*
- ***Find the Mole:*** *Experiment with number sizes*
- ***Teddy Count:*** *Ideal introduction to numbers*
- ***Write a Letter:*** *Creative fun at the keyboard*
- ***Colour Train:*** *Play at spotting colours*
- ***Pick a Letter:*** *Word building made easy*
- ***Spell a Word:*** *Enjoy naming the pictures*
- ***Teddy Bears Picnic:*** *Move around a maze*

Fun School 2 for 6 to 8 year olds contains:

- ***Number train:*** *Calculations made enjoyable*
- ***Shopping:*** *Which shops for which products?*
- ***Maths Maze:*** *Fun improving arithmetical skills*
- ***Treasure Hunt:*** *Introduction to coordinates*
- ***Bounce:*** *Get to grips with angles*
- ***Packing:*** *Discover tesselating shapes*
- ***Caterpillar:*** *Word building challenge*
- ***Number jump:*** *Have fun practising tables*



Fun School 2 for Over-8s contains:

- ***Build a Bridge:*** *Shape-fitting challenge*
- ***Passage of Guardians:*** *Enjoy anagrams*
- ***Unicorn:*** *First steps in problem solving*
- ***Logic Doors:*** *Mapping made easy*
- ***Souvenirs:*** *An introduction to travel*
- ***Code Boxes:*** *Discover binary arithmetic*
- ***Mystery machine:*** *Have fun breaking codes*
- ***Escape:*** *A final check on progress*

ORDER FORM

Please supply Fun School 2 on ☐ tape at £9.95* ☐ 3in disc at £12.95*
For ages: ☐ Under-6s ☐ 6-8 years ☐ Over-8s
Amstrad CPC version
** Add £2 Eire/Europe, £4 Overseas*

☐ Cheque payable to Database Software

☐ Please debit my Access/Visa card no:

Expiry date: /

Name_____

Address_____

_____ Postcode_____

Signature_____

SEND TO: **Database Educational Software, FREEPOST, Europa House, Adlington Park, Adlington, Macclesfield SK10 4YB.**

Order Hotline: 0625 879920 (Credit card only)

CPC12

Update

French titles for CPC

FRANCE is to provide a string of CPC releases for Active Distribution to market in the UK.

Active (01-385 7622) will sell titles produced by French software house Coktel Vision, including Jungle Book.

"This is a classic film that appeals to young and old", said Active managing director Robert Stallibrass. "It is being promoted again this Christmas which will ensure a high level of product awareness for the computer game.

"Future CPC titles from Coktel Vision will include Freedom, Emanuelle, Terrific and Peter Pan".

Accent on action

A TRIPLE attack on the Christmas market has been launched by Gremlin Graphics (0742 753423).

New CPC titles are soccer simulation Roy of the Rovers, Round Table legend Artura and space adventure Dark Fusion.

Gremlin has also announced Vietnamese war action game Butcher Hill for release early in the New Year. Prices £9.99 on tape, £14.99 on disc.

Seeing clearly

TWO new anti-glare screen filters designed for the CPC have been released by Compumart (0509 610444). Made using micro-mesh material, they fit both colour and mono CPC monitors, and cost £12.95.

"The filters' design eliminates all reflection and dramatically reduces glare from the CPC screen", said Compumart director Steven Burke.

Budget breakout

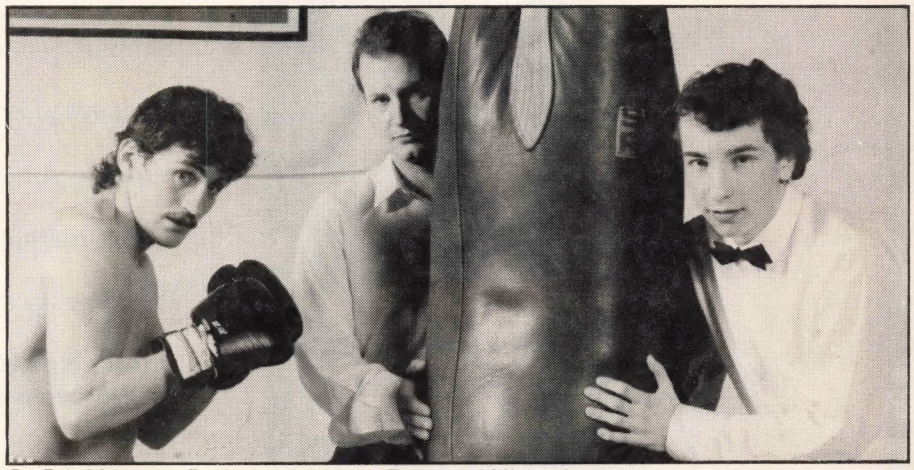
NEW budget releases on the Gamebusters label from Cascade Games (0423 525325) are space flight combat Ace 2088 and breakout game Traz which features a construction kit. Price £2.99 each.

Entertainment Centre hits the spot

RESPONSE by dealers to the new Amstrad Entertainment Centre has been extremely favourable a company spokesman has told *CPC Computing*.

"The system capitalises on the growing trend for teenagers to spend their free time experimenting with computers, listening to music and watching TV", he said. "The Amstrad Entertainment Centre combines all three of these activities in one and will allow parents to buy a unit that is an educational tool at the same time".

The system contains a CPC, colour monitor, TV tuner, clock radio, work desk, joystick and 17 games. The CPC464 version costs £399 and the CPC6128 version is £499.



By Fair Means or Foul game creators Terry and Michael Simpson meet boxing star Barry McGuigan

Superior seeks a knockout

ONE of the most popular arcade games in the history of UK computing – Repton from Superior Software – may soon be available on the CPC.

Acorn specialist Superior (0532 459453) has taken over the Alligata label and acquired the rights to many of its games.

The payoff for CPC users will come from completely new titles under a joint Superior/Alligata label – plus conversions of some of Superior's biggest hits like Repton which were written originally for the BBC Micro and Electron market.

"Hardly a week goes by without someone writing to ask when we are going to make our Repton series available on the CPC", said Superior director Steve Hanson.

"This will certainly be one of the conversions we will consider very seriously, but we want to make the new label known for top quality brand original software rather than conversions and re-issues".

First step in this direction is By Fair Means or Foul, a boxing simulation which features the opportunity to use illegal methods as well as the Queensberry rules.

Providing the referee doesn't spot you cheating you could end up a world champion. Price £9.95 on tape, £14.95 on disc.

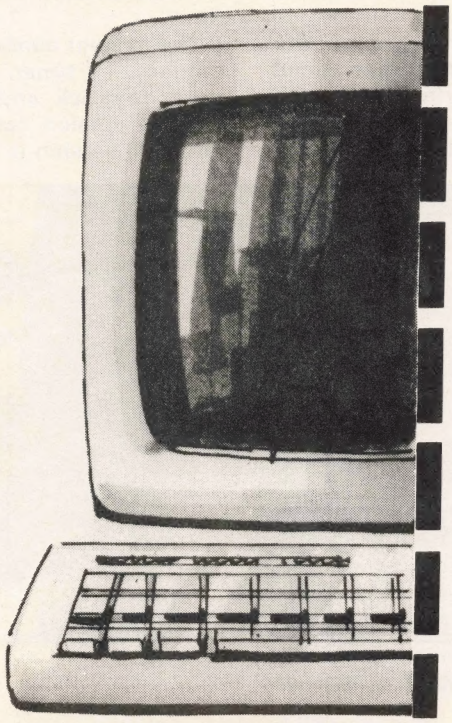
CPC versions of major titles from three of Britain's leading software houses are being prepared by the programming team at Walking Circles. They are 3D space adventure The Wanderer for Elite, space flight simulation Echelon for US Gold, and Spitting Image for Domark.

"I expect all three to be on the market before Christmas", said David Llewellyn of Walking Circles. "We have in fact just completed The Wanderer and the other two are in their final stages. The Wanderer and Echelon are conversions from existing formats while Spitting Image has been written from an original design".

THE OFFICIAL AMSTRAD USER CLUB

THE OFFICIAL AMSTRAD USER CLUB & AMSOFT MAIL ORDER

When you buy a whole new Amstrad system, why use only half of it's potential?



1. 12 Issues of the Official Amstrad Magazine.
2. FREE access to our superb CPC Technical Support Service.
3. Discounted Software . . . best prices in the U.K!
4. Monthly Amdata CPC Newsletter.
5. 24hr Ordering Service.
6. Welcome Pack.
7. Introductory Gift if you join TODAY! (worth between £3 - £7)

A Message from Amstrad's Chairman . . . . .

Dear Amstrad Computer User,

You don't need me to remind you that you have selected the best computer in it's price range. Numerous journalists from the specialist press have now contributed to the opinion that Amstrad computers represent the best all-round machine you can buy.

One of the many reasons why computer journalists have received our products so enthusiastically is undoubtedly our careful attention to providing information on the system and it's software.

You can be a part of Amstrad's ongoing effort to inform and help users by taking advantage of this opportunity to join the User Club. Catering only for the Amstrad computer user, this specialist support club was initially formed by Amstrad solely for the purpose of assisting you with all your computer needs.

There are many immediate and direct benefits available, so don't delay before filling out the application form below and sending it back to Amsoft.

Yours sincerely,

Alan Sugar

Alan Sugar
Chairman AMSTRAD Plc

THE OFFICIAL AMSTRAD USER CLUB & AMSOFT MAIL ORDER, ENTERPRISE HOUSE, PO BOX 10, ROPER STREET, PALLION INDUSTRIAL ESTATE, SUNDERLAND SR4 6SN TEL: (091) 510 8787

▲ HOW TO JOIN THE CLUB ▲

Simply fill in the coupon and return it to us at the address shown together with your remittance. We'll send you your exclusive membership discount card, a 'Welcome Pack' and your FREE Introductory Gift.

FOR OFFICE USE ONLY

Yes I want to enjoy the benefits of Amstrad User Club Membership - Please enrol me today.
I enclose cheque/P.O. for £24.95 payable to AMSOFT MAIL ORDER or debit my credit card

ACCESS/ VISA

Expiry Date

My machine model is .....

Name: .....

Address: .....

..... Postcode: ..... Day Phone Number: .....

All offers subject to availabilty; all prices correct at time of going to press

POST TO
OFFICIAL AMSTRAD USER CLUB
ENTERPRISE HOUSE, PO BOX 10, ROPER STREET
PALLION INDUSTRIAL ESTATE, SUNDERLAND SR4 6SN
or Ring (091) 510 8787 NOW!

AMSTRAD
USER CLUB
It pays to belong!

CPC/DB12

THE OFFICIAL AMSTRAD USER CLUB

Play the mating game

PHIL LAWSON checks out Camel Micro's Chess

CHESS has been around for thousands of years, and many different computer versions have claimed to be the best on the market. GM Chess doesn't pretend to be the strongest or the quickest, but it offers a good range of features for beginners and more advanced players.

The initial menu offers five selections (shown in Figure I). The first two are fairly self explanatory, while openings, mid-game and end game options show various pitfalls and tactics to look out for in those parts of the game.

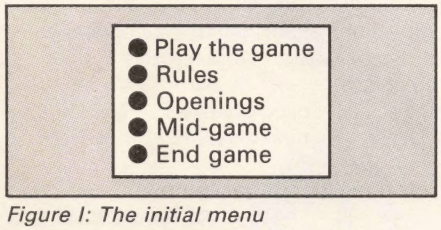


Figure I: The initial menu

The strength of a chess program isn't only judged by how well it plays, but also by its ability to follow standard openings of which GM Chess has 32. They include the famous Sicilian Defence and Queen's Gambit, and you can force the CPC to follow the moves for any one of them. This gives you an opportunity to practise defending or attacking against these common strategies.

How well does it play? That depends on which of the seven levels you select. Each is harder than the last, while level zero is speed chess, where the moves must be made within 20 seconds. Failing to do so loses the game.

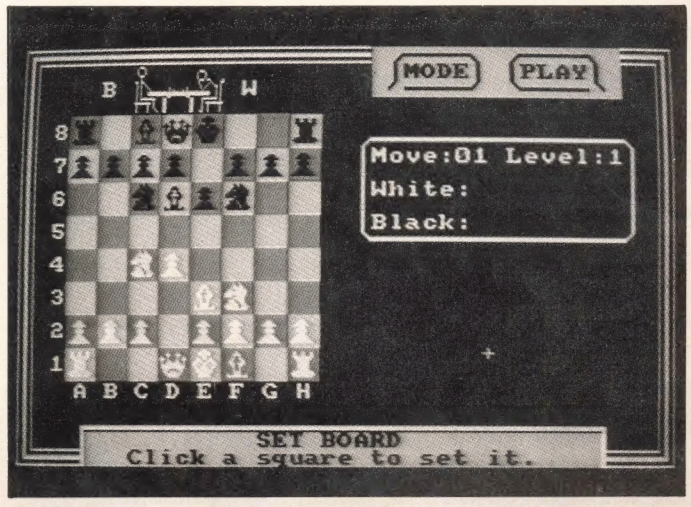
Level one gives a reasonable game, and only needs a little concentration to win. On level two the program tends to think longer about its moves. This time increases with each level, and level six can take hours per turn.

On several occasions the computer got bogged down in certain areas of the board, completely ignoring the fact that with one move I could achieve checkmate. This only occurred on the lower levels, and is very similar to the oversights made by inexperienced players.

All the standard moves are catered for, including castling on both sides and capturing en passant, which the computer seemed to take advantage of whenever possible. Should these and other general chess terms be unfamiliar to you, a tutorial section is available by selecting Rules from the main menu.

This gives a complete breakdown on each piece, how it moves and captures, and how it's described using chess notation. Notation is simply a shorthand method for indicating each move, but GM Chess shows the moves in a slightly different form. It first gives the square on which the

Turn to Page 8 ▶



You can set up the board in any position, and play from there

◀ *From Page 7*

piece can be found, followed by its destination square. For instance, the ition shown in the picture on the previous page.

1 d2-d4	b8-c6
2 g1-f3	e7-e6
3 c1-e3	g8-f6
4 b1-d2	f8-d6
5 d2-c4	O-O

Table I: Some simple chess moves

The layout of the board is also discussed, showing the starting positions for every piece, and it is this tutorial section which should make GM Chess appeal to novices.

Since some games can last for many hours, there's a load/save facility to enable you to continue at a later date. This allows you to save the current position before trying risky moves. If things don't work out, or even if they do, you can go back and try a different approach.

Analysing your game in this way is probably the best way to improve your technique, and it's possible to recap all the moves up to the current position. This is invaluable, especially if you wish to find out where you went wrong. You can even stop the process in order to continue playing at any point.

With such a powerful and useful function, it's a pity it cannot be used when the game has finished. Another bad point is that the only way to get back to the main menu is by resetting the CPC and starting from scratch. This means that if you want to improve your gameplay against several defences, you'll have to reset the computer to try the next one.

Various magazines and daily papers include chess sections where recent games are discussed and problems posed. To allow you to follow them more closely, the board can be set up in any way you wish. You can then play from this position, find a solution to "mate in three" problems, or simply follow the listed moves. If you have a mono monitor, the colours of the squares and pieces can be changed, and printouts of the game moves can be obtained at any time.

Conclusion

This is a good version of chess, challenging and at the same time beatable. When one level can be be defeated easily, you simply move on to the next. Although play takes a little longer you should be using this time to study the board and decide on your next couple of moves.

I've outlined a couple of minor bad points, but neither detract from what is a very good game indeed. If you enjoy a game of chess, or you just wish to learn how to play, I can thoroughly recommend it.

Product: GM Chess
Price: £14.95 (disc only)
Supplier: Camel Micros, Wellpark, Willeys Ave, Exeter, Devon, EX2 8BE
Tel: 0392 211892

POINTS FOR

- Six levels of difficulty
- Recap and load/save facilities
- Tutorial sections

AND AGAINST

- Higher levels take too long

NEW

Pro-Punter

INVEST WITH PRO-PUNTER

Turn your CPC6128 into an expert racing adviser!

★ **PRO-PUNTER** is a sophisticated, disc-based expert computer system for home micros which **ACCURATELY** interprets horse racing form.
★ In extensive trials over both **FLAT AND NATIONAL HUNT** seasons:
57% of horses top-rated by **PRO-PUNTER** won, representing an average post tax **PROFIT** per race of 80% of capital invested.
85% of winners came from within the top three rated, representing an average post-tax **PROFIT** per race of 18%, all three backed.
★ Researched and developed over three years, **PRO-PUNTER** uses information from the racing press and analyses **ALL** major aspects of racing form.
★ Produces a **RACE FORECAST**, generates a **COMPUTER S.P.**, highlights good and poor **VALUE BETS** and **OFFERS INVESTMENT ADVICE.**
★ **PRO-PUNTER** adjusts automatically to the race under analysis. You don't need to be an expert yourself.
★ Since its launch in May 1987, proofing to the racing press has resulted in a profit in excess of 90 level-stake points over 100 races and a strike-rate in excess of 50%.
★ Available now on **CPC 6128**, all **Amstrad PCW's, BBC, Atari ST, IBM** and **PC machines.**

PRICE £57.50 including VAT, P&P.

Orders and enquiries to: DGA SOFTWARE, PO Box 36, Ashton-Under-Lyne, Lancs OL7 9AJ. Tel: 061-330 0184. Please Specify Machine

IN CONCERT WITH YOUR COMPUTER

Duette

DEVISED AND WRITTEN BY COLIN JOHNSON

A TOTALLY NEW MUSICAL EXPERIENCE

Do you have a CLARINET · FLUTE · OBOE · RECORDER · SAXOPHONE · TRUMPET or VIOLIN?

Then just pick up your chosen instrument and play away, with creative musical accompaniments provided by your computer.
Easy to load – Easy to use program features:
Demo or Performance Mode
Tuning Facility · Speed Control
Clear on-screen musical text.

2 separate programs available now!

REPERTOIRE I
12 favourite classical/traditional tunes: FÜR ELISE · CHANSON DE MATIN · RADETZKY MARCH and 9 others

CHRISTMAS COLLECTION
A full dozen of the best-loved Christmas Carols: O COME ALL YE FAITHFUL · AWAY IN A MANGER and many more.

Tape (CPC 464) £9.99
Disk (CPC 6128) £14.99

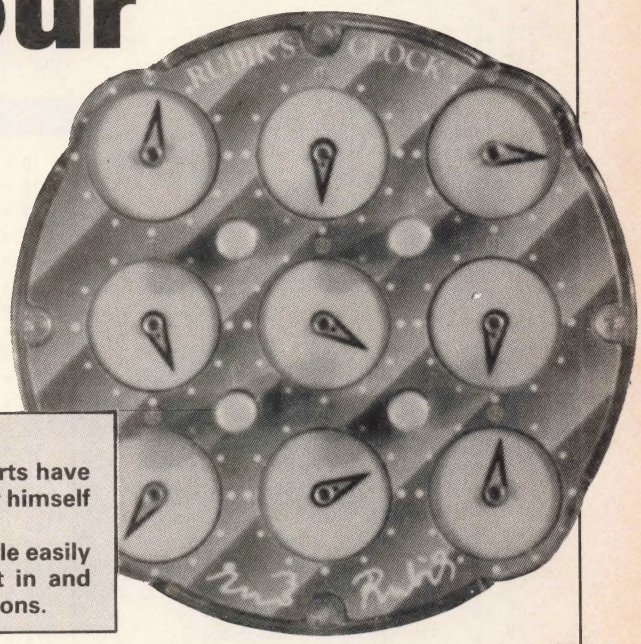
Available now (cash with order) from Chester Music or phone 01-253 6947 to order with your Access card.

CHESTER MUSIC
J & W Chester/Edition Wilhelm Hansen London Limited
Eagle Court London EC1M 5QD Telephone 01-253 6947

publishers of inspiration...

Professor, your time is up!

Christopher Stops shows an easy way to beat Rubik's Clock



PROFESSOR Rubik's puzzles, the Cube and Magic, have kept millions of people enthralled for hours. Now another mind-boggling device – Rubik's Clock – has been unleashed on the public. Many people have declared it impossible, and reports have even stated that the professor himself can't crack it.

Now you can solve the puzzle easily with this listing. Just type it in and follow the on-screen instructions.

```
10 REM      Rubik's Clock solver
20 REM      by Christopher Stops
30 REM Adapted for CPC by Phil Lawson
40 REM       (c) CPC Computing
50 MEMORY &7FFF:MODE 1
60 INK 1,6:INK 2,0:INK 3,24:INK 0,11
70 GOSUB 1560:GOSUB 170:GOSUB 300
80 GOSUB 420:GOSUB 1440:GOSUB 440
90 GOSUB 1100:GOSUB 1440
100 d=8:GOSUB 1210:GOSUB 440
110 FOR M=4 TO 7:d=m:GOSUB 590:NEXT
120 GOSUB 1100:GOSUB 1440:GOSUB 1630
130 FOR M=4 TO 7:d=m:GOSUB 590:NEXT
140 FOR E=0 TO 3:d=e:GOSUB 840:NEXT
150 GOSUB 1080
160 PEN 2:PAPER 1:LOCATE 1,10:END
170 REM initialise
180 RESTORE 200:FOR a=0 TO 8
190 READ dx(a),dy(a):NEXT
200 DATA 216,328,568,328,568,72
210 DATA 216,72,392,328,568,200
220 DATA 392,72,216,200,392,200
230 FOR a=0 TO 3:READ bx(a),by(a):NEXT
240 DATA 304,264,480,264,480,136,304,136
250 FOR r=0 TO 8:READ d$(R):NEXT
260 SYMBOL 240,24,24,60,60,126,126,24,24
270 SYMBOL 241,24,24,24,24,24,24,24,24
280 RETURN
290 DATA "top left ","top right ","botto
m right ","bottom left ","top middle ","
middle right ","bottom middle ","middle
left ","central "
300 REM drawscreen
310 WINDOW #1,10,40,1,25:PAPER #1,2
320 CLS #1:WINDOW #2,1,9,1,25:PAPER #2,1
330 CLS #2:PEN #2,2:PEN #1,1:PAPER #1,0
340 PLOT 1000,1000,0:FOR C=0 TO 8
350 x=dx(C):y=dy(C):r=54
360 GOSUB 1400:NEXT
370 PLOT 1000,1000,3:FOR B=0 TO 3
380 r=32:x=bx(B):y=by(B)
390 GOSUB 1400:NEXT:PLOT 1000,1000,1
400 TAG #1:MOVE 300,398:p=2:GOSUB 1600
410 PRINT #1,"RUBIK'S CLOCK";:RETURN
420 REM start
430 t$="Hold the puzzle with either face
 up in front of you.":GOSUB 1340:RETURN
440 REM solve_central
450 d=8:GOSUB 1480
460 IF ok=-1 THEN GOSUB 490
470 d=8:GOSUB 1210
480 RETURN
490 REM solve_central_2
500 d=8:GOSUB 1170:GOSUB 560
510 d=0:GOSUB 1270
520 t$="Set all buttons up, then turn th
e "+d$(0)+"dial until the "+d$(8)+"dial
points to 12.":GOSUB 1340
530 GOSUB 1440:GOSUB 560:d=0
540 GOSUB 1270:d=8:GOSUB 1170:tt=0
550 GOSUB 1670:RETURN
560 REM all_up
570 FOR B=0 TO 3:up=-1:GOSUB 1300
580 NEXT:RETURN
590 REM solve_middle
600 GOSUB 1480:IF ok THEN GOSUB 620
610 GOSUB 1210:RETURN
620 REM solve_middle_2
630 GOSUB 1170:b=d:GOSUB 790
640 up=-1:b=d:GOSUB 1300
650 d=d+3:GOSUB 1270:d=d-3
660 t$="Set buttons as shown, then turn
the "+d$((D+3) MOD 4)+"dial until the "+
d$(D)+"dial points to 12.":GOSUB 1340
670 GOSUB 1440:tt=d+3:GOSUB 1670
680 d=d+3:GOSUB 1270:d=d-3
690 t$="Change the "+d$(D MOD 4)+"button
 to be down.":GOSUB 1340
700 b=d:up=-1:GOSUB 1300
710 b=d:up=0:GOSUB 1300
720 GOSUB 1440:tt=d+3:GOSUB 1670
730 d=d+3:GOSUB 1270:d=d-3
740 t$="Now turn the "+d$((D+3) MOD 4)+"
 dial until the "+d$(8)+"dial points to 1
 2.":GOSUB 1340
750 GOSUB 1440:tt=d+3:GOSUB 1670
760 b=d:GOSUB 790:b=d:up=0
770 GOSUB 1300:d=d+3:GOSUB 1270:d=d-3
780 GOSUB 1170:tt=d+3:GOSUB 1670:RETURN
790 REM set_middle_buttons
800 b=b+3:up=-1:GOSUB 1300:b=b-3
810 b=b+1:up=0:GOSUB 1300:b=b-1
820 b=b+2:up=0:GOSUB 1300:b=b-2
830 RETURN
840 REM solve_edge
850 GOSUB 1480:IF ok THEN GOSUB 870
860 GOSUB 1210:RETURN
870 REM solve_edge_2
880 GOSUB 560:GOSUB 1170:GOSUB 1030
890 b=d:up=-1:GOSUB 1300
900 d=d+3:GOSUB 1270:d=d-3
910 t$="Set the buttons as shown, and tu
rn the "+d$((D+3) MOD 4)+"dial until the
 "+d$(D)+"dial points to 12.":GOSUB 1340
920 GOSUB 1440:tt=d+3:GOSUB 1670
930 d=d+3:GOSUB 1270:d=d-3
940 t$="Change the "+d$(D)+"button to be
 down.":GOSUB 1340
950 b=d:up=-1:GOSUB 1300:b=d
960 up=0:GOSUB 1300:GOSUB 1440:tt=d+3
970 GOSUB 1670:d=d+3:GOSUB 1270:d=d-3
980 t$="Now turn the "+d$((D+3) MOD 4)+"
dial until the "+d$(8)+"dial points to 1
2.":GOSUB 1340
990 GOSUB 1440:tt=d+3:GOSUB 1670:b=d
1000 GOSUB 1030:b=d:up=0:GOSUB 1300
1010 d=d+3:GOSUB 1270:d=d-3:GOSUB 1170
1020 tt=d+3:GOSUB 1670:RETURN
1030 REM set_edge_buttons
1040 b=b+1:up=-1:GOSUB 1300:b=b-1
1050 b=b+2:up=-1:GOSUB 1300:b=b-2
1060 b=b+3:up=-1:GOSUB 1300:b=b-3
1070 RETURN
1080 REM done
1090 t$="You have now solved Rubik's Clo
ck!":GOSUB 1340:RETURN
1100 REM turn_over
1110 t$="Now turn the puzzle over to the
 other side.":GOSUB 1340:RETURN
1120 REM ok
1130 TAG #1:MOVE dx(d)-8,dy(d)+48:p=0
1140 GOSUB 1600:GOSUB 1610
1150 MOVE dx(d)-32,dy(d)+8:GOSUB 1600
1160 PRINT #1,"OK ? ";:TAGOFF #1:RETURN
1170 REM solving
1180 TAG #1:MOVE dx(d)-40,dy(d)+8:p=0
1190 GOSUB 1600:PRINT #1,"DOING";
1200 TAGOFF #1:RETURN
1210 REM solved
1220 TAG #1:MOVE dx(d)-8,dy(d)+48:p=0
1230 GOSUB 1600:PRINT #1,CHR$(240);
1240 MOVE dx(d)-8,dy(d)+32:PRINT #1,CHR$
(241);
1250 MOVE dx(d)-44,dy(d)+8
1260 PRINT #1," DONE ";:TAGOFF #1:RETURN
1270 REM turn
1280 TAG #1:MOVE dx(D MOD 4)-32,dy(D MOD
 4)-16:p=0:GOSUB 1600
1290 PRINT #1,"TURN";:TAGOFF #2:RETURN
1300 REM set_but
1310 TAG #1:MOVE bx(B MOD 4)-8,by(B MOD
4)+8:p=3:GOSUB 1600
1320 IF up THEN PRINT #1,"U"; ELSE PRINT
```

Turn to Page 10 ►

◀ *From Page 9*

```
 #1,"D";
1330 RETURN
1340 REM print message
1350 P=INSTR(T$," "):WHILE p<>0
1360 PRINT #2,LEFT$(T$,P-1)
1370 T$=RIGHT$(T$,LEN(T$)-P)
1380 P=INSTR(T$," "):WEND
1390 PRINT #2,T$:RETURN
1400 REM draw circle
1410 FOR S=-R TO R STEP 2
1420 Z=SQR(R*R-S*S):PLOT X+S,Y+Z
1430 DRAW X+S,Y-Z:NEXT:RETURN
1440 REM wait
1450 PRINT #2
1460 t$="Any key to cont...":GOSUB 1340
1470 WHILE INKEY$="":WEND:CLS #2:RETURN
1480 REM ask_dial
1490 t$="Is the "+d$(D)+"dial at 12?"
1500 GOSUB 1340:GOSUB 1120:GOSUB 1540
1510 ok=1:i$=UPPER$(INKEY$):IF i$="Y" TH
EN ok=0 ELSE IF i$="N" THEN ok=-1
1520 IF ok=1 THEN 1510
1530 CLS #2:RETURN
1540 REM delay
1550 FOR ti=1 TO 1000:NEXT:RETURN
1560 addr=&8000:RESTORE 1590
1570 FOR a=1 TO 6:READ x:POKE addr,x
1580 addr=addr+1:NEXT:RETURN
1590 DATA &3E,&00,&CD,&E4,&BB,&C9
1600 POKE &8001,p:CALL &8000:RETURN
1610 PRINT #1," ";
1620 MOVE dx(d)-8,dy(d)+32:PRINT #1," ";
:RETURN
1630 TAG #1:p=0:GOSUB 1600:FOR f=4 TO 7
1640 MOVE dx(f)-8,dy(f)+32:PRINT #1," ";
1650 MOVE dx(f)-8,dy(f)+48:PRINT #1," ";
1660 MOVE dx(f)-28,dy(f)+8:PRINT #1,"
";:NEXT:TAGOFF #1:RETURN
1670 REM turn
1680 TAG #1:MOVE dx(tt MOD 4)-32,dy(tt M
OD 4)-16:p=0:GOSUB 1600
1690 PRINT #1,"    ";:TAGOFF #1:RETURN
```

Get it right!

LINE	CHSUM	LINE	CHSUM	LINE	CHSUM	LINE	CHSUM	LINE	CHSUM	LINE	CHSUM
10	14528	300	15648	590	54688	880	44160	1170	46912	1460	26976
20	13728	310	37056	600	01728	890	55808	1180	62112	1470	57600
30	59904	320	00192	610	40736	900	39616	1190	35840	1480	00288
40	52736	330	50048	620	64992	910	60864	1200	34944	1490	44864
50	07872	340	64544	630	26176	920	39520	1210	12768	1500	60352
60	20992	350	22880	640	59008	930	39616	1220	39776	1510	19328
70	24000	360	44832	650	39616	940	15680	1230	06976	1520	16736
80	05632	370	57920	660	25344	950	53248	1240	26976	1530	26272
90	54528	380	19488	670	39520	960	53728	1250	02752	1540	20096
100	54816	390	39392	680	39616	970	06208	1260	04192	1550	57600
110	39872	400	44000	690	36576	980	16352	1270	36096	1560	58560
120	58208	410	32288	700	55808	990	35584	1280	41152	1570	63904
130	39872	420	49824	710	46080	1000	45312	1290	62208	1580	41504
140	05216	430	19456	720	39520	1010	64928	1300	35456	1590	07904
150	63808	440	63584	730	39616	1020	21728	1310	60256	1600	33536
160	50080	450	62848	740	16352	1030	47744	1320	50848	1610	22912
170	42400	460	26880	750	39520	1040	56576	1330	27008	1620	51968
180	11744	470	01248	760	15712	1050	16480	1340	29760	1630	62560
190	30432	480	27008	770	49120	1060	06784	1350	49888	1640	50144
200	45440	490	31520	780	60736	1070	27008	1360	43648	1650	60704
210	33984	500	15872	790	48832	1080	20512	1370	14528	1660	27520
220	23200	510	36448	800	06784	1090	64352	1380	11200	1670	36096
230	23264	520	48832	810	51168	1100	16960	1390	34272	1680	64928
240	29536	530	28704	820	17568	1110	27712	1400	46080	1690	23424
250	44832	540	38912	830	27008	1120	53600	1410	18976		
260	32544	550	65184	840	18272	1130	39776	1420	42016		
270	57504	560	64992	850	63872	1140	41888	1430	04320		
280	27008	570	40704	860	40736	1150	36224	1440	53536		
290	37472	580	42880	870	49472	1160	40416	1450	15552		

BBD ·DUST· COVERS

GET SMART!

BBD ·DUST· COVERS

Protect Your Computing Equipment With BBD PROFESSIONAL DUST COVERS

- In todays economic climate where equipment failure costs time and money protecting your hardware from wear and tear is the smart thing to do and the smart way to do it is with dust covers from the BBD Professional Range.
- Manufactured from top quality dark grey washable nylon and attractively finished with red piping, BBD covers are simply the smartest protective covers available.
- BBD covers can be washed and ironed without fear of fading or shrinking and will never crack or lose their shape.
- With all these superlative features you might expect BBD covers to be a little expensive. Nothing could be further from the truth.

COVERS FOR THE AMSTRAD CPC 464 : £7.50
COVERS FOR THE AMSTRAD CPC 6128 : £7.50

Please state whether colour or monochrome monitor

- BBD also offer a wide range of matching covers for printers from only £5.00.
- These include Amstrad DMP 2000, 3000 and 3160, Amstrad DMP 4000 and LQ3500, and a selection from Brother, Canon, Citizen, Epson, Star etc. etc. Generally covers for 80 column printers are £5.00 and for 132 column £6.00

GET SMART! GET BBD!

BBD Computer Dust Covers (Dept 52)
The Standish Centre
Cross Street, Standish, Wigan WN6 0HQ
Telephone: 0257 425839 (Ext. 52) Fax: 0257 423909.

VISA

DEALER ENQUIRIES WELCOME.
PERSONAL CALLS WELCOME. OPEN SATURDAYS 9 TILL 4

EMR

MIDITRACK MUSIC SYSTEM

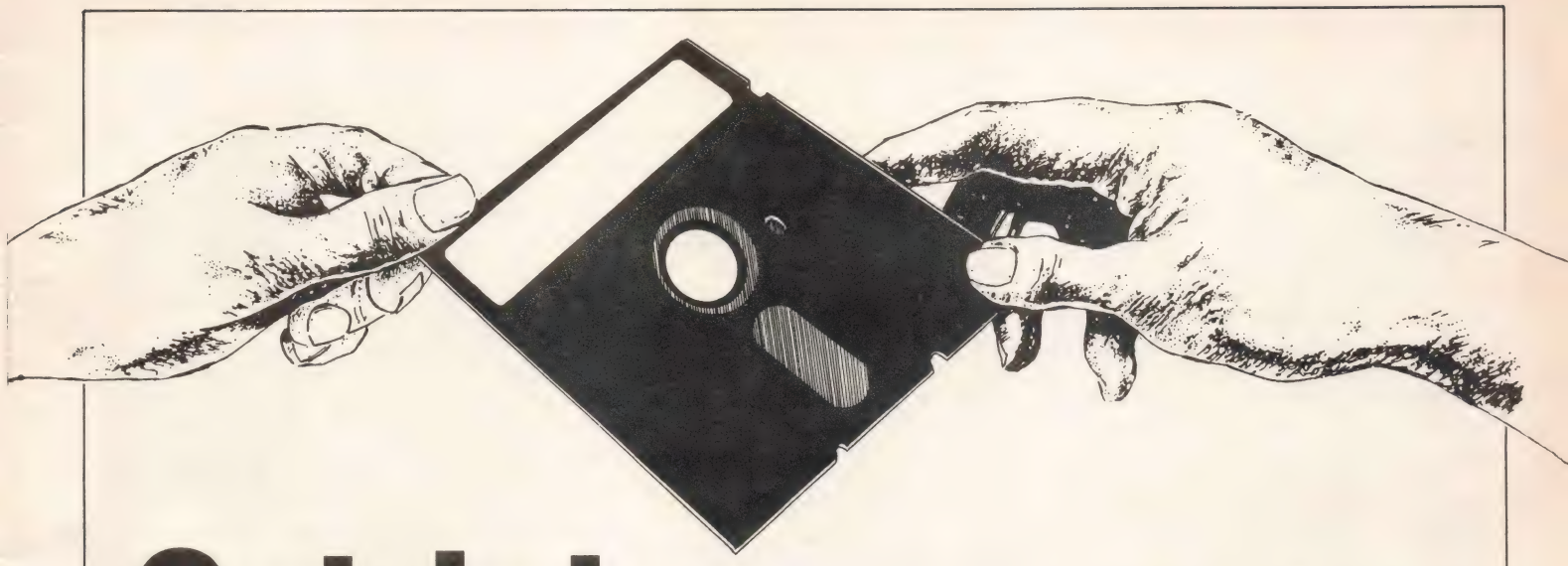
The MIDITRACK PERFORMER from EMR opens up exciting new dimensions in music-making with a MIDI instrument and your CPC.

- Turns you into a performer, composer, arranger and conductor within seconds!
- Designed to improve your playing skills.
- The only full feature MIDI interface for CPC micros that works with ALL Midi instruments – keyboards, guitars, expanders and effects.
- Makes a home recording studio for the family from beginners to pro-players.
- Suitable for CPC 464, 664 and 6128 micros.
- Complete systems supplied, including keyboards from £199, with big savings.

"Best introduction to the world of Midi – User friendly, simple to master" – *Amstrad Action*
"The Performer is excellent value and has many facilities to help get the most out of recording" – *Your Computer*
"The Amstrad Performer system as it stands is a very good one and it gets 10 out of 10 from me" – *Amstrad User*

● XMAS £99 OFFER ●
(inc VAT, P&P offer closes Dec 31st 1988)
SAVING A HUGE £30!!

For CPC MIDI Interface plus MIDITRACK PERFORMER on tape or disk, 2 Midi cables and free music/technical advice.
Full information and direct ordering from: (No stamp required) FREEPOST, EMR LTD., 14 Mount Close, Wickford, Essex SS11 7BR.
Telephone: 0702 335747 (24 hrs).
ACCESS & VISA orders accepted



Get into the transfer market

Avoid all those file copying blues, courtesy of DAVE INSTONE-BREWER

ALL disc drive owners will know the difficulties associated with copying files between discs. PIP, the CP/M utility, is very tedious when you only have one drive, and the other routines copy the whole disc, not individual files. However, these problems are now a thing of the past.

This utility has been designed to work with any setup which obeys the rules of Amsdos. It is certainly compatible with the new KDS 5.25in drive and should work with any drive with up to &800k capacity and 256 directory entries.

Filecopy can transfer any files normally associated with Amsdos or CP/M. It will copy Basic, binary and Ascii files of any length from one disc to another, even on different drives, including 5.25in. As it only makes use of available ram, programs currently in memory will not be corrupted.

Type the program in, save and run it. This will poke the machine code into the highest area of free memory, and then save it as *copy.&a2*. HIMEM is set, and the new command |COPY is initialised.

The &A2 – or some other number – in the filename indicates the start address of the code, which is &A200 in this example. This will vary according to the value of HIMEM when the program was run, and is included so that the code can be installed quickly on future occasions. All you need is a simple loader such as:

```
10 MEMORY &A1FF
20 LOAD"copy.&a2"
30 CALL &A200
```

Table I shows the four command formats. If the file won't fit into memory, it will be copied in smaller sections. Therefore copying may be quicker if other programs are not loaded.

Filecopy's ease of use and the simplicity of its syntax disguise the fact that copying files under Amsdos is difficult. The firmware assumes that Basic or binary files being saved are loaded in their correct positions in memory, which means that programs being copied would be likely to overwrite any program already in the computer.

How it's done

The firmware also demands that only one disc is used in a drive at any one time. Files opened on a disc are automatically closed when another disc is used in the same drive, so files which are too large to fit into the CPC's memory cannot be copied easily.

These restrictions concerning the use of one disc are due to the fact that Amsdos makes a map of the disc's space usage. Called the allocation vector, or ALV, it is regularly examined in order to find out where files are and which parts of the disc are free.

Before the firmware begins writing to a disc it checks to see which one is in the drive. This is so that it doesn't overwrite any sectors which were free on the source disc, but which may contain a valuable data on the desti-

Turn to Page 12 ►

|COPY,"file"	From one disc to another.
|COPY,"file>B"	From the current drive to drive B.
|COPY,"A:file>B	From drive A to drive B.
|KOPY	An alternative version of |COPY. Provided in case another RSX of the same name is present.

● CPC464 owners will need to put the parameters in a string variable, for example:

```
a$="file"
|COPY,@a$
```

Table I: The four new commands

◀ From Page 11

nation disc. When the disc is changed, it is logged in and a new ALV constructed to locate the free sectors.

All well and good, but because the ALV resides at a specific place in memory, the map of the source disc will be wiped out. So when you come back to copy the second half of the program the firmware draws a new map, opens the file at the beginning, and starts again.

This utility makes room for a second ALV and also a second checksum vector – CSV – to ensure that the correct disc is being used. Unfortunately this still doesn't stop the firmware throwing a wobbler and closing any open files when a different disc is inserted. Therefore, files in danger of being closed are temporarily allocated to another drive where the firmware is more than happy to ignore them. This drive transfer is only theoretical, and it doesn't matter whether or not a second drive is fitted.

If the firmware routines are abandoned completely, any changes to the format which has been logged into Amsdos – such as using extra tracks, or fitting a 5.25in B drive – are not recognised, and the utility would be restricted to normal setups. As many people have something non-standard, the firmware has not been ignored, just persuaded to cooperate.

My program pretends that every file is an Ascii file, and writes the Basic or binary header itself. This allows it to load and save files from any part of memory free at the time.

Problems with CP/M

Copying CP/M files presents its own problems. The only way you can tell the length of a file is from its directory entry, which maps out the disc sectors the file occupies. Therefore with a CP/M file the FILE–IN–CHAR call goes on reading characters until it runs out of sectors in the directory entry, and then returns with carry and zero false.

To copy *.com* files I use an undocumented feature of the FILE–IN–CHR call at &BC80. This call returns with both carry and zero flags false if an end of file (EOF) marker has been found so that we know when to stop reading a headerless file, such as an Ascii file.

However, it can detect two types of EOF marker – a file EOF and a directory EOF – though only one is documented. The normal way Amsdos marks the end of a file is with the character &1A, which is added to the end of the file when it is saved. In CP/M there are no file headers indicating the length of a file, nor are there EOF markers within files.

The first type of EOF – the file EOF – can be distinguished from the directory EOF by the value in the A register, which is &1A for the file EOF and &0F for the directory EOF.

It is a mystery why Amstrad did not provide this type of utility with the CPC. Once you start using it you will wonder how you ever managed your disc housekeeping without it.

Disc file copier program

```
10 REM  Disc File Copier
20 REM by Dave Instone Brewer
30 REM  (c)  CPC Computing
40 REM ----------------------
50 PRINT:PRINT"Poking machine code"
60 m=INT((HIMEM-&500)/&100)
70 MEMORY (m*&100)-1:mem=m*&100:n=mem
80 e=200:RESTORE 200
90 sum=0:READ a$:IF a$="X" THEN 170
100 FOR x=0 TO 9:b$=MID$(a$,1+x*2,2)
110 IF LEFT$(b$,1)="M" THEN b=VAL(RIG
HT$(b$,1)):sum=sum+&80+b:a=m+b:GOTO 1
30
120 a=VAL("&"+b$):sum=sum+a
130 POKE n,a:n=n+1:NEXT
140 b$=MID$(a$,1+x*2,3)
150 IF sum<>VAL("&"+b$) THEN PRINT"Da
ta error in line "e:END
160 e=e+10:GOTO 90
170 f$="COPY.&"+HEX$(m)
180 SAVE f$,b,mem,&380
190 CALL mem
200 DATA 010AM0211BM0C3D1BCC9460
210 DATA 12M0C31FM0C31FM0434F3E8
220 DATA 50D94B4F50D900000000002EC
230 DATA 00FD215DM4A7CAE7M2FD5D6
240 DATA 7E00E6CFFD7700CD7ABC5AA
250 DATA CD8FBCCD0DM42A71B0ED5AE
260 DATA 5B6CAEA72007 2A8DB0ED497
270 DATA 5B89AE010008A7ED42D5446
280 DATA E5214EAC06103600231027F
290 DATA FBDD6E00DD660106004E3DE
300 DATA C5235E2356EB114EAC233D8
310 DATA 7E2BFE3A28021313EDB03CE
320 DATA C1412A7DBE7EC6414F2145C
330 DATA 4FAC7EFE3A2806363A2B37A
340 DATA 7104043A4EAC4FFDCB003C4
350 DATA E6EB2B2B7EFE3E20173644E
360 DATA 0005052 34E3A4EACCBEF369
370 DATA B92809CBAFB92804FDCB511
380 DATA 00A6214EACD1D5C5CD77570
390 DATA BCD22DM3E5DDE12A7DBE646
400 DATA 110A00191150AC01080014A
410 DATA EDB0EB362EEB130103003EE
420 DATA EDB03E001114001977112A1
430 DATA 3F0019772377112D00191C0
440 DATA 77233680C1063AED434E3CF
450 DATA ACE1110008A7ED52224C3FA
460 DATA ACFDCB0066C4B0M22BD15CC
470 DATA ED52010008973CED423037A
480 DATA FB3DCA13M3EB57CD39M1561
490 DATA CD8FBCD297M3CD7DBCCD6D7
500 DATA 92BC2144ACFDCB0066C8555
510 DATA C3A5M21E10E5D51E10CD4CD
520 DATA 80BC3804FE0F28227723369
530 DATA 067FCD80BC772310F91D44E
540 DATA 20E91520E4D1E1E5D5CD65B
550 DATA 76M1CDB3M1CDDFM1D1E16D7
560 DATA 18CFD5CD7ABCD24FM3D1634
570 DATA F19257E1E5D5CD07M2FD6C8
580 DATA CB006ECCC8M13A48M4FE552
590 DATA 44C0D1E13E10935A1600407
600 DATA EB29292929CD01M4EB7A446
610 DATA B3C87E23CD95BCD2BEM364D
620 DATA 067F7E23CD95BC10F91B468
630 DATA 7AB320EAC921C7M1CDD460A
640 DATA BC793202BF217AC822003AD
650 DATA BFDF00BFC985FDCB00EE661
660 DATA 060E214EACED5B4CACDD44C
670 DATA E5CD8CBCD271M3E1C9FD767
680 DATA CB0066C8CD26M40A0D0738E
690 DATA 496E736572742 0746865 3D6
700 DATA 2020534F55524345FF21331
710 DATA 44AC0101003E001826FD26B
720 DATA CB0066C8CD26M40A0D0738E
730 DATA 496E736572742 0444553371
740 DATA 54494E4154494F4EFF21386
750 DATA 48AC01000 13EFF325DBE380
760 DATA E5CD26M420646973632043F
770 DATA 616E6420702657373203A0
780 DATA 61206B6579FFCD18BBFE567
790 DATA FCCAEBM32A7DBE7EA7285E6
800 DATA 0378414F110800197EFE2B9
810 DATA 0230017011240 0197EFE26D
820 DATA 02300171DD2A40BEDD6E3F4
830 DATA 0ADD660BE5116EAC011637F
840 DATA 00EDB0DD6E1ADD661BD1531
850 DATA E5011600EDB0D1216EAC4A5
860 DATA 011600EDB0E1CDA5M2CD556
870 DATA 26M40D120BFFC9E5CDD151F
880 DATA M2010400E1EDB0C9114041F
890 DATA 00A7ED522248AC112D0033A
900 DATA A7ED52224AACE5CDD1M2603
910 DATA EB1144AC010400EDB0E146F
920 DATA C92A7DBE7E010000A72837C
930 DATA 020E102A40BE09110C0016E
940 DATA 19EBC9CD26M47C434F504A2
950 DATA 592C2246494C453E4122268
960 DATA 20636F7069657320464 9352
970 DATA 4C4520746F2064726976369
980 DATA 652041FFC336M4CD26M44B9
990 DATA 0A0D4E6F7420656E6F7531F
1000 DATA 676820726F6F6D2E20FF3F9
1010 DATA C3EBM3CD26M40A0D4361463
1020 DATA 6E6E6F74206F70656E203B1
1030 DATA 736F7572636520666 96C3EC
1040 DATA 652E20FFC3EBM3CD26M455A
1050 DATA 0A0D43616E6E6F7420632FD
1060 DATA 6C6F736520736F7572633FF
1070 DATA 652066696C652E20FF1838A
1080 DATA 7ACD26M40A0D43616E6E388
1090 DATA 6F74206F70656E20646539E
1100 DATA 7374696E6174696F6E203F9
1110 DATA 66696C652E20FF1854CD426
1120 DATA 26M40A0D43616E6E6F74324
1130 DATA 20636C6F736520646573392
1140 DATA 74696E6174696F6E20663EC
1150 DATA 696C652E20FF182DCD263BF
1160 DATA M40A0D43616E6E6F742031E
1170 DATA 7772697465206696C653EB
1180 DATA 2E20FF1812CD26M40A0D305
1190 DATA 436F7079204572726F723C5
1200 DATA 2E20FFCD26M40A0D416237E
1210 DATA 6F727465642E0A0DFFCD42F
1220 DATA 28M1C336M4856FD024C94D7
1230 DATA F57E23666FF1C91100BF4F5
1240 DATA 211DM4010900EDB00E00277
1250 DATA C300BFCD0FB93A02C0C34D6
1260 DATA 18B9E3F57E233C28063D3F1
1270 DATA CD5ABB18F5F1E3C931F66B3
1280 DATA BF3E07C35ABB7C434F5043A
1290 DATA 592C20627920442E496E2C9
1300 DATA 73746F6E652042726773D9
1310 DATA 65722031393838000000 1D1
1320 DATA X
```

WITH AN AMSTRAD CPC TV & COMPUTER SYSTEM YOU'LL WANT TO BE SENT TO YOUR ROOM MORE OFTEN.

COLOUR TV & COMPUTER MONITOR
Not only is the monitor great for playing games in glorious technicolour, when used with the Tuner you have a brilliant 14" colour TV. So after a hard day blasting aliens you can relax and watch your favourite TV programmes.

17 GAMES
You can get started right away with the 17 Games included in the package. There's all the best titles (Trivial Pursuit®, Monopoly®, Cluedo®, Scalextric® and Scrabble® to name just a few) so the fun starts as soon as you get your hands on an Amstrad CPC TV & Computer System. (Cassette boxes shown for illustration.)

CLOCK/RADIO
Set the Clock/Radio alarm to your favourite radio station and waking up in the morning won't be such a drag.

JOYSTICK
The Joystick gives you ultimate control. You can fly jets and fire missiles with amazing precision, making every flight a smooth ride.

CPC 6128 COMPUTER
A state-of-the-art disk drive computer. So if it's power you want, the CPC 6128 has the memory of a whole star system. The disk drive gets you loaded and ready to fire in seconds.

WORKDESK
The Workdesk keeps everything in one place. So you have the complete TV & computer system at your command all of the time.

Amstrad CPC TV & Computer Systems turn any bedroom into a nerve centre of pure excitement.

A colour TV, colour monitor, clock/radio, CPC computer, with disk or cassette drive, 17 games, joystick and a workdesk to keep everything tidy, all add up to the best home computer package ever offered.

If you've got an Amstrad CPC TV & Computer System in your bedroom, being sent there is never a problem.

AMSTRAD TV & COMPUTER SYSTEMS FROM
£399.

WITH DISK DRIVE
£499.

Available at participating branches of: Allders, Clydesdale, Comet, Currys, Dixons, Hobbyte, Hughes TV & Video, Laskys, Peter B Ledbury, R.V.S. Ltd, and all good stockists.

1968 AMSTRAD 1988
20 YEARS
ANNIVERSARY

Please send me more information on Amstrad CPC TV & Computer Systems

NAME_____

ADDRESS_____

_____ C1

AMSTRAD

Amstrad plc, P.O. Box 462, Brentwood, Essex CM14 4EF. Tel: (0277) 262326

R.R.P. prices (inc VAT) correct at 1.9.88. Prices subject to change without prior notice. Products subject to availability. All software sold subject to licence. Amstrad is the registered Trademark and CPC 6128 the Trademark of Amstrad plc © 1988 Amstrad plc. All rights reserved.

CPC ARCADE

Far from over...

Game Over II, Dinamic
£9.99 tape, £14.95 disc
Joystick and keys

SOME time back I reviewed the original version of Game Over. This story of galactic power struggles between the beautiful but evil Gremla and the heroic Arkos was rightly given an award. I now have in my possession Game Over II, and I'm pleased to say that is even more impressive than its predecessor.

Quality was obviously the aim when Dinamic put the package together. The artwork on the box and free poster are immaculate. A touch naughty, but immaculate nonetheless. They have even included the original Game Over program on the flip side of the disc.

Game Over II is played in two parts. The first consists of four zones, and if you negotiate these successfully you are provided with a five-digit access code. When you load the second program it will demand this code before allowing you past the title screen.

Game one, zone one, charts your approach to moon number four. This horizontally scrolling extravaganza is in the true tradition of shoot-'em-ups – blast everything in sight, even before it appears on the screen. Alien craft include gold kamikaze ships and small blue fighters which are both agile and vicious.

Zone two is the most difficult. Flying low over the lunar surface you will be rammed from behind, meteored from above, zapped from the front, and finally fried from

below by particularly accurate and ill-timed lava eruptions.

Eventually the action subsides and your ship dives headlong into an underground cavern – zone three. The usual compliment of alien ships is supplemented with a new and novel adversary, the multiplier serpent. This writhing string of sprites can only be destroyed by a volley of three shots to the head.

Low on fuel, you land your craft at the far end of the cavern and mount your transport – a large prehistoric beast – for the swamp crossing. Also devoid of mechanical devices the aliens seek different modes of transport.

Airborne attack is achieved with the assistance of pterodactyls, and hanging from the beast's claws your attacker drops towards you as the reptile flies overhead.

Other swamp dwellers include baddies on foot and superb little characters sat astride giant toads. With no laser for defence you must rely on your skill with the photonic blade – a ball of light which extends and retracts like a yoyo. This device has a very short range, so the enemy has to be engaged at close quarters. Miss, and you're dead.

Game two consists of six different levels. It is completely independent of program one, and your score and lives tally are reset to zero and five respectively.

Set against a mountain backdrop, you are attacked by hordes of bad guys on bouncy rubber space hoppers. Equipped only with a short-jump jet pack you are aided by a rebel space hopper which follows you around killing every alien it touches. By clever use of the jet pack you can leap the on-coming aliens, dragging your lethal buddy through their ranks.

After a short period of jumping and dragging you reach a hole in the ground which is your doorway to zone two. Leaving your hopper behind, you jump into the unknown, landing right beside a turbo laser. What a stroke of luck!

The hi-tech bunker is patrolled by guards and droids. It also contains a proton loader pack and two extra lives. The only thing that eluded me was the exit to zone three!

Game Over II is a skilful combination of superb graphics and original gameplay. Buy it.

Jon Revis

Presentation 95%
First rate.

Graphics 91%
Colourful, detailed and highly original.

Sound 89%
A cracking title tune and good sound effects.

Playability 91%
A good spread of sections from easy to difficult.

Addictiveness 90%
The ability to go straight to game two is a welcome feature.

Value 93%
Especially so with the inclusion of Game Over I.

OVERALL 92%
An essential addition to any gameplayer's collection.

Love's labour lost

Hercules – Slayer of the Damned,
Gremlin
£9.99 tape, £14.99 disc
Joystick only

HERE'S a game of mixed mythologies – Hercules is the Roman name given to the Greek hero Heracles. But let's not get involved in all that. Suffice it to say that Hercules was a victim of circumstance and his father's hanky panky.

So the gods sent him to the spiteful King Eurystheus who gave him 12 labours to perform – such everyday feats of heroism as slaying the Hydra and the terrible lion of Nemea, and swabbing out the Augean stables which hadn't been cleaned for 30 years.

The labours are graphically represented on the screen and you must hit them to collect them, which is a bit of a cop out. Watch out for the spider which drops down from the sky to try to pinch them. By hitting it you can fend it off.

You are armed with a club and you have your fists and feet, but what happened to the helmet, sword, shield and bow and arrow given to Hercules by the gods?

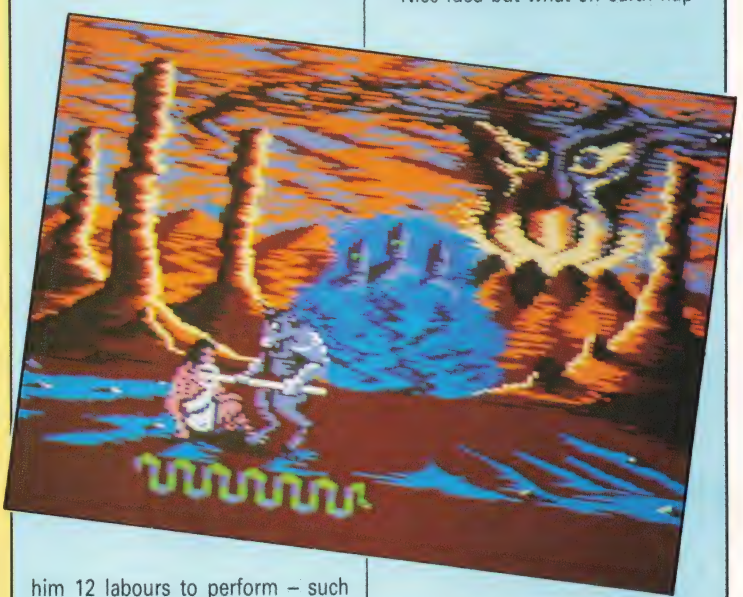
Anyway, that bit's easy. The trouble is, you have to fight off a skeleton at the same time. The joystick is used to trigger karate-like chops with names such as Mountain Shaker, Punch of Death and Zeus' Torment.

The fighting's weird. A snake moves back and forth across the bottom of the screen and you can only inflict damage on your enemy when he's over it. Lots of toing and froing going on.

The problem with all this fighting is that you can never tell when you connect with something. Several times I managed to bring the skeleton to its patella and whack it soundly across the sternum and cranium, but if you think it's going to go down you're labouring under a misapprehension.

Nor is there anythng to show the relative strengths of the protagonists, although when you're winning the snake shrinks. You know you've had enough when you fall down dead. When/if you collect all 12 labours you meet the Minotaur.

Nice idea but what on earth happened between concept and implementation? There's many a slip 'tween cup and Styx I suppose. And I'm still waiting for the Damned to make an appearance. Weren't they a pop group?



Ian Waugh

Presentation 62%
No hi-score but there's a Pause option and you can turn the music off leaving the sound effects.

Graphics 65%
Big graphics, big sprites, but Hercules walks duck-toed.

Sound 90%
Good use of the sound chip.

Playability 48%
Rather too labour-intensive for me.

Addictiveness 30%
Doesn't have much – any? – gameplay.

Value 42%
Large-scale aspirations which don't really come off.

OVERALL 48%
Not one I'd spend my pocket money on.

THE GAMES WINTER EDITION

Get in your sled for the luge

Snow good at all

The Games – Winter Edition, Epyx
£9.99 tape, £14.99 disc
Joystick and keys

NOT content with the success of its Olympic mega-compilation – Gold Silver Bronze – Epyx has now released a seven-event winter variation.

That most frightening but exhilarating of alpine events – the luge – is your first challenge. I was expecting the usual view from behind the sled, but was disappointed with the Epyx's choice of a series of sections, viewed from above, across which the sled slides. Worst of all, the event was completed in absolute silence.

Cross-country skiing was never the most gripping of computer sports, but this version is the worst I've seen. Joystick waggling provides the motive power, but uphill and downhill sections are indicated by the direction in which the skier's skis are pointing. I suppose a change in the background was too much to expect.

Tedium is the name of the game in the next event – figure skating. Select one of three pieces of music and then assemble a sequence of 14 dance moves to go with it. This complete, the music is replayed and you must execute your dance steps in time with the music – Yaaaaawn!

At last, a playable event. Looking through the competitor's eyes you speed down the ramp of the 90 metre ski jump. Steering left and right you maintain a straight course, then hit the fire button to launch yourself into the air. Changing to a side view, you must fly with grace and balance until it is time to touch down. Nice game but still no sound.

It's back to basics with the slalom event – a pair of red and blue sprites avoid little black flags as they move diagonally across the screen. No expense spared, eh?

Single-colour sprites are the order of the day once again, but this time they're competing in the speed skating event. Two "action" windows in the middle of the screen show the competitors' skating movements. The circuit is represented by a large oval around which two numbers move. Good skating animation is the event's only redeeming feature.

A skier's eyeview is the perspective employed for the downhill event. Pick your way between the course markers – simple black rectangles – as you race to the bottom.

If you want an Olympic compilation, I strongly recommend that you save your money and buy Gold Silver Bronze.

Carol Barrow

Presentation 80%
It's a pity the program isn't as good as the instructions.

Graphics 59%
Varied but poor.

Sound 38%
Obviously Epyx prefer the minimalist approach.

Playability 56%
Ranges from adequate to abysmal.

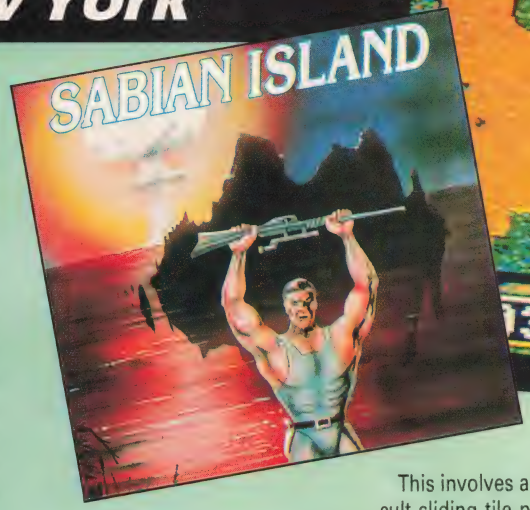
Addictiveness 30%
There wasn't one event I would have played more then twice.

Value 29%
Definitely not.

OVERALL 51%
You have been warned!

Cross country skiing

Save New York



Sabian Island, Skyslip Software
£9.95 tape, £14.95 disc
Joystick and/or keys

THE evil Dr. Q has planted an atomic bomb in New York and your task is to defuse it. However this requires a timing device which has been dismantled and the pieces scattered on a Pacific island.

You must collect all 15 parts of the timer and reassemble it, but if you don't succeed within six hours New York will be mushroomed. This plot, in fact, conceals a blast everything that moves game.

You a, bare-armed Ramboesque figure, see an overhead view of part of the island. There are also panels showing which section of the island you are exploring and which bits of the timer you have found.

As you fight your way around you find extra guns and grenades which are displayed with your score, while in the screen's top right corner is a digital countdown.

Your character only moves forward, but can be rotated to face in the desired direction. Control is difficult to master and since you only shoot forwards, is probably the hardest part of the game... well almost.

As you progress you encounter minefields, mazes, dark areas, tanks, and hordes of enemy troops. Among all this are glowing question marks which are the timer fragments you must collect.

Here an annoying quirk appears: Once past an island section you can't backtrack, so that moving too quickly can result in pieces being left behind. Additionally, the map panel is highlighted according to your current position but doesn't appear to correspond to the directions you take.

During this collection stage the game can be paused, but once all the pieces are gathered this feature doesn't work and you face the most difficult task with no time to think.

This involves a horrendously difficult sliding tile puzzle. As you frantically waggle the joystick trying to make some sense of the lines and blobs of colour, you curse the authorities for forgetting to give you a diagram showing how the timer should look when completed.

The graphics are colourful and clear, but movement of the large sprites is rather jerky. This, coupled with somewhat imprecise controls, makes accurate movement a nightmare.

Sound is rather limited – mainly spot effects with a sort of wail when you are killed. One consolation is that when you die you restart from the same spot rather than being put back to the beginning.

Sabian Island tries to combine two different concepts – shooting and thinking – and doesn't seem to have achieved either well. Perhaps future releases will concentrate more on playability.

Pat Winstanley

Presentation 65%
Rather confusing.

Graphics 70%
Clear and colourful, but scrolling and sprite movement are jerky.

Sound 60%
Adequate, but not wonderful.

Addictiveness 55%
Lack of playability spoils a good idea.

Value 50%
This is really budget standard.

OVERALL 60%
Too much unnecessary frustration.

Battle for Midway

1943, Capcom/US Gold
£9.95 tape, £14.95 disc
Joystick or keys

THIS arcade conversion takes you back more than 40 years to the west coast of the Midway Islands, where the Japanese forces suffered some of their biggest war losses.

Is Japan the superior nation? Sat at the controls of an American P38 warplane you relive the action as you try to devastate the battleship Yamato.

You are no sooner airborne than you are subjected to hostile fire from hundreds of fighters flying at you from the top of the screen. If the going gets too tough, a barrel roll will save you from being shot down. Don't rely on this manoeuvre too much though, as you can only manage four.

As you progress slowly towards the Yamato, Red Arrow-like planes will occasionally appear from random parts of the screen. If you shoot them all down the word Pow will pop up, and if you fly over it your fuel tanks will be replenished. If the Pow is shot at, however, it will change between six types of weapon such as multi-directional fire or my favourite – allied fighters at your wingtips.

Once you have seen off all the small planes you should have visual contact with Yamato. First you must attack smaller boats escorting the ship before going for the kill. As you approach her you will see all her guns swivel in your direction.

If you thought that confronting Yamato sounded a touch difficult, I would advise you to eject now. It has been confirmed that a massive plane – similar in shape to the American B17 Flying Fortress – is in the area. You should aim at the four propellers, which burst into flame when hit.

I've played the 1943 arcade machine a fair bit, but even taking this into account I found the CPC conversion far too easy.

John Butters

Presentation 90%
User-defined keys, high score table, and two-player option.

Graphics 85%
Smooth scrolling, colourful, and clear.

Sound 20%
Why did they bother?

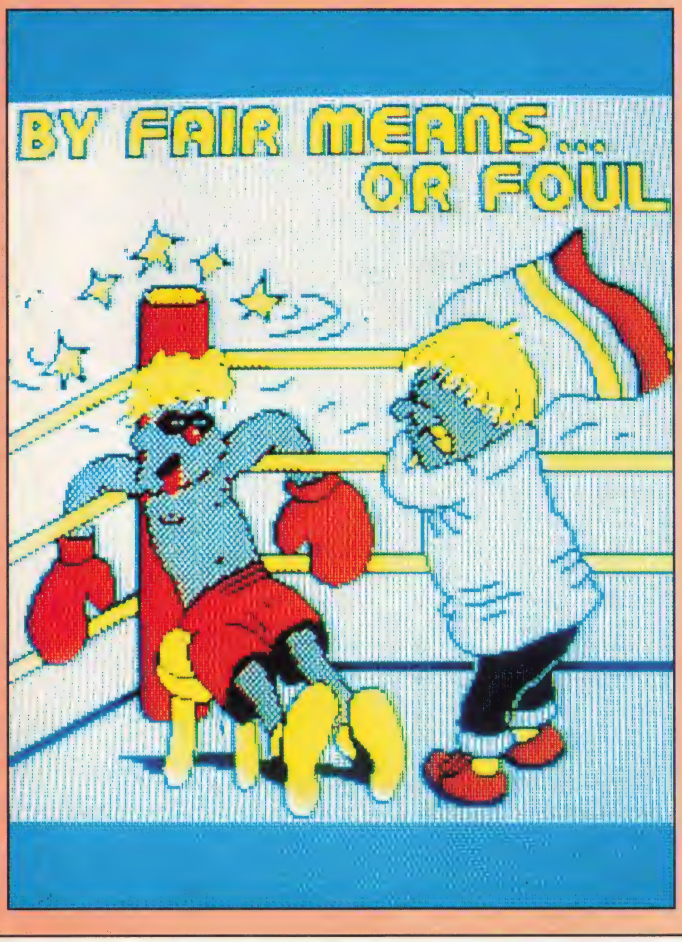
Playability 90%
No problems here.

Addictiveness 40%
Needs to be more difficult.

Value 50%
Average game at an average price.

OVERALL 60%
Just too easy.

A game with PUNCH!



By Fair Means or Foul, Superior Software
£9.95 tape, £14.95 disc
Joystick or keys

SPORTS simulations, whether they be football, snooker, Olympics or martial arts, seem to be the one type of game which never dates. Computerised boxing, however, doesn't seem to have had the impact or staying power of other sports scenarios. But then in real life it isn't quite so popular as some of the others.

By Fair Means or Foul is not for the boxing purist because, as the title suggests, you can cheat. Not very ethical, but if what I see on the telly is anything to go by, it does add a certain air of realism.

At the centre of the screen are the two opponents and the traditionally-dressed referee, hands on hips. You start with the Junior Championship and from there you can only go up. The outlines of both competitors are shown above their corners, the number in their centres representing the lives remaining from the initial five.

Bouts are 15 rounds long, and to win you must score more points – shown above your figure on the left – than your opponent, or reduce his energy to nothing. This is represented by a bar at the bottom of the screen, and the original green gradually changes to red as the fighters take blows. It's a knockout when the bar turns solid red.

The shadowy crowd watches every move and applauds on cue. An occasional comment also comes from their direction – "C'mon pansy" and so on. They also jump around at the end of each round. There is not much use of sound apart from this, merely the bell and smack of glove on flesh.

In some ways By Fair Means or Foul is reminiscent of Yie Ar Kung Fu, as some of the illegal moves look very much like those in martial arts games. Sixteen moves are available to you – eight with the fire button depressed and eight without, and you can also block punches.

The cheating aspect adds strategy, and you need cunning to outwit the referee. If you are renowned for fouling, your outline will be red and the ref watches you intently.

An amber outline means that you may get away with some illegal

Four old favourites

Big Screen Hero, Skyslip Software
£9.95 tape, £14.95 disc
Joystick or keys

THIS is a collection of four old games, revamped and tagged with names and characters from classic films. Each game loads separately, and throughout each one the screen is surrounded by a border which gives you the impression of being in the audience.

Clint Bites the Dust casts you as the man himself taking cover behind an overturned waggon in a frantic battle with hordes of Indians who appear in the middle of the screen and move towards you, enlarging in a reasonable simulation of 3D perspective.

Your movements are limited to left and right as you try to avoid hurled tomahawks while shooting the redskins with your inexhaustible gun.

Frankenstein Meets Dr. Jekyl is a Pacman-type game where you play Dr. Jekyl trying to escape from several Frankenstein characters. Eerie music during pill collection and spine-chilling screams when you are cornered make this an atmospheric little number.

The Sawmill Massacre casts you in the role of heroic saviour. In the background a struggling girl is tied to a conveyor belt which inches inexorably towards a spinning and toothsome saw blade. On the right of the screen is the off switch, but between you and it is a hulk of a man who ain't gonna let you past without a fight.

Using a variety of kicks and punches you must beat your opponent to reach the switch in time. Fail, and a dripping red curtain comes down on the action when girl and blade meet. Stop that screaming, woman, and pull yourself together.

Ginger Bones and the Caverns of Doom is a hunchback-style game with poisoned apples dropping on you, flying arrows at knee and head height, and gaps to swing over on uncatchable ropes. This seemed the most difficult game of the four, with hazards coming thick-and fast.

None of the games are original but the linking theme of classic movies blends well with the vintage nature of the ideas. Best viewed as a four-in-one compilation of old favourites, newcomers to computing who probably haven't played them will enjoy it, as will old hands wishing to indulge in a bit of nostalgia.

Pat Winstanley

Presentation 80%
Nicely done, no real complaints in this department.

Graphics 75%
A bit blocky and jerky, but clear and colourful.

Sound 80%
Rather simple but very well used and fits in well.

Addictiveness 70%
Probably won't keep you going for long.

Value 70%
I'd have liked another film for the price.

OVERALL 75%
Great fun, particularly for casual or younger players.

moves, while green means that you have a reputation as pure as the driven snow, and can get away with anything.

Your first opponent is Mild Martin, a boxer of excellent repute, but illegal moves are much more damaging and fun than the standard left hook. As you progress you will meet such legends of the ring as Steady Eddie and Deadly Dan.

If boxing games are your cup of tea, have a go with this one. Possibly it's a little expensive in these days when the budget title is king, but it's playable and the graphics are well done.

Jo Wood

Presentation 75%
Good demo mode, and the joystick option is much easier to use than the keyboard.

Graphics 70%
Good use of colour considering the limits the game imposes.

Sound 50%
Not much is needed, and you don't get it!

Playability 85%
Blatant cheating adds an extra dimension.

Addictiveness 79%
Nice enough, but not one I would keep returning to.

Value 78%
Fair.

OVERALL 78%
Punch up fans will find it worth adding to their collections, especially with the cheating element.

Blast those boats

Off Shore Warrior, Titus
£9.99 tape, £14.99 disc
Joystick or keys

IF the nearest you've ever been to speedboat racing is blowing your rubber duck round the bath, here's a chance to get a flavour of the real thing without even getting wet.

In Off Shore Warrior you are a speedboat racer, with a difference – the year is 2049 and sports have become a little more dangerous. Not only do you have to pip your opponents to the post but, if you can, obliterate them too. One thing's for sure, if you don't do it to them, they'll certainly do it to you!

The races take place on the world's most prestigious lakes such as Victoria and Michigan. You view the speedboat from the rear, steering it forwards over a winding circuit. This is shown by a series of floating markers and, at the outer limits, protruding crags which lose you a few valuable seconds on impact. In the distance lies the horizon – different at each venue, and suitably futuristic. Speed and quick reflexes are of the essence. At each level you are provided with a limited number of shots, usually two less than the number of opponents.

These increase as you progress through successive levels, so the chances of being blocked by an opponent become more likely. Whenever you collide with an enemy you suffer a time penalty.

At the top of the screen the number of shots, speed and position are all given. Changes in position can occur very rapidly so it is important to keep track of where you are. A spurt at the end, for example, can take you from last to first.

Unfortunately, the speedboats are badly drawn. If they had been better defined the game would have been a little less wearing on the old optic fibres. There appears to be too much going on – water scrolling forwards, moving landscape beyond, markers, crags, opponents and so on.

Off Shore Warrior is a playable and addictive race game. Graphically, however, it is very flawed and disappoints accordingly. Stick to dry land.

Tony Flanagan

Presentation 61%
Pretty, if redundant, piccies between levels.

Graphics 47%
Blocky with jerky scrolling.

Sound 25%
Limited sound effects; no music.

Playability 76%
Certainly gets the adrenalin flowing.

Addictiveness 89%
Compulsive despite its flaws.

Value 48%
Better graphics would have made it worth buying.

OVERALL 49%
Lacks finesse.

Bomb the Bismark!

Night Raider, Gremlin
£9.95 tape, £14.95 disc
Joystick and/or keys

THE trouble with flight simulators is that they can take quite a long time to get into. This is fine if, once you've mastered the controls, the game is worth playing, but extremely frustrating otherwise. How refreshing, then, to find a flight combat game which is both relatively easy to get into and fun to play.

Night Raider takes you back to the early years of the Second World War. As a bomber pilot, it's your task to locate and destroy the Bismark, Germany's most dangerous battleship.

At the start of the mission you find yourself in the cockpit of your Avenger torpedo bomber, waiting to take off from the aircraft carrier HMS Ark Royal. You can flip between four main screens at will. The first displays the view from your cockpit window, below which is a range of real-time controls – altimeter, compass, air speed, artificial horizon and so on.

Enemy aircraft – in the form of Luftwaffe Dorniers – can be seen from the window as they approach. If you are flying low enough, the range of ships deployed against you can also be identified. And, of course, it is from this window that you can see the Bismark, providing you get that far.

Torpedoes can also be fired from this screen when you switch to fire mode, in which a movable sight appears. With practise this proves to be extremely effective in combating the waves of enemy aircraft intent on your destruction.

The second screen provides the engineer's view of the Avenger, displaying an impressive range of controls. These are well laid out and easy to use. Without mastering them you will be unable to take off, land, or even drop torpedoes.

The first thing you must do on this screen is switch the light on. Then you can get the plane ready for action by selecting a fuel tank; setting a rich fuel mixture, pushing the throttle knob up to full, moving the arrester to Up, and making sure the wings are in the locked position. Of course, you mustn't forget to load up with torpedoes.

From there it's back to screen one, where you release the brake and pull back slightly on the joystick for a comfortable take-off. Once airborne you return to the engineer's view to reset the controls to appropriate levels. Make sure you turn the light off, because leaving it on makes you vulnerable to attack.

The third screen provides the strategy element. A grid map shows an overview of the battle arena with your position in relation to the enemy aircraft and ships. Aircraft, E-boats and U-boats are all shown, as well as HMS Ark Royal and the Bismark.

On the fourth screen is the tail gunner's view. The objective here is simple – shoot any enemy craft you see. Constant flipping from screen one to four will ensure that you keep the Avenger virtually free from attack.

As all this demonstrates, Night Raider provides plenty to do and think about in equal quantities – just how a game should be. A flight training mode is provided for the novice, and if you are a veteran you can exercise your high-flying skills on several different missions.

If you can manage to be four people at once – pilot, engineer, navigator and gunner – Night Raider is for you. Like the best of games, it is demanding, full of variety, and delightfully playable.

Tony Flanagan

Presentation 90%
Comprehensive playguide packed with historical detail. Practise and mission modes.

Graphics 81%
Excellent layout, particularly screens two and three.

Sound 60%
Limited, but anything more would be unnecessary.

Playability 90%
Clear in its objectives with lots to do and plenty of challenge.

Addictiveness 86%
With several missions to complete, you should be attempting to sink the Bismark long into the Third World War.

Value 81%
A full game deserving its full price.

OVERALL 90%
Compelling flight/combat action.

Castle Computers

NOW TAKEN

Castle House
11 Newcastle House
Burslem
Stoke-on-Trent, ST6 3QB
Tel: 0782 575043

AMSTRAD SPECIAL OFFERS

Heroes of the Lance	6.99
Salamander	6.00
Vindicator	6.00
Matchday 2	6.00
Out Run	6.99
Captain Blood	6.50
Cybernoid 2	6.99
Virus	6.50
Typhoon	6.25
Rambo 3	6.25
Operation Wolf	6.25
Guerilla Wars	6.25
T Wrecks	7.99
Double Dragon	6.25
D. Thompsons Olympic Challenge	6.75
Night Raider	7.50
Fernandez Must Die	6.75
Football Manager II	6.75
Barbarian II	6.75
Marauder	7.50
Black Tiger	7.50
Last Ninja 2	8.50
Victory Road	6.50
After Burner	6.99
R Type	6.99
Gunship	9.95
19 Boot Camp	6.75
Target Renegade	6.00
Inter Karate	2.99

AMSTRAD SPECIAL OFFERS

Karnov	3.95
Enduro Racer	3.50
Waterloo	3.95
Austerlitz	3.95
Redcoats	3.95
Special Operations	2.99
Battle for Midway	3.95
Battle for Britain	3.95
Pegasus Bridge	6.99
Sorceror Lord	7.95
Spitfire 40	2.99
Battlefield Germany	6.99
Andy Capp	3.95
Starglider	3.99
Dragons Lair 1	2.99
Armageddon Man	3.95
Auf Wiedersehen Monty	2.25
Agent Orange	1.75
Avenger	1.75
Aliens US	2.50
Aliens UK	1.75
By Fair Means or Foul	6.50
Amazing Shrinking Man	2.99
Bridge of Frankenstein	1.25
Bubbler	0.99
Beyond The Ice Palace	6.75
Bionic Commando	6.99
Basil Mouse Detective	2.50
The Big Sleeze	1.99
Star Raiders II	0.99

AMSTRAD SPECIAL OFFERS

Black Magic	2.99
Bobby Bearing	1.75
The Boggit	2.99
Big Trouble Little China	2.99
Captain America	1.99
Championship Sprint	2.50
Combat School	3.50
Chall of the Gobots	1.25
Cholo	2.50
Centurians	1.25
Cosmic Shock Absorber	0.99
Cybernoid	6.99
Nosferatu	0.99
City Slicker	1.99
Clever & Smart	1.99
Cora	0.99
Dan Dare	1.70
Dandy	0.99
Dark Sceptre	2.99
Doomarks Revenge	2.99
Doomsday Blues	1.50
Dambusters	1.70
Dogfight 2187	1.99
Not A Penny More	2.99
Eye	2.99
Escape Singes Castle	1.99
Eidolon	1.99
Evening Star	3.95
Farlight	1.99
Future Knight	1.25

AMSTHAD SPECIAL OFFERS

Flunky	1.75
Frankie Goes Hollywood	1.75
Gladiator	1.99
Gothic	2.99
Greyfell	1.50
Grange Hill	1.99
Guadal Canal	2.99
Gunsmoke	2.99
Gauntlet	2.75
Get Dexter II	4.95
Galvan	1.50
Hot Runestone	1.50
Hijak	1.50
Hive	0.99
Hopping Mad	6.25
Heavy on the Magik	1.99
How to be a Complete B***ard	2.99
Impossible Mission	0.99
Impossible Mission 2	6.75
Inter Karate	1.99
Inter Karate+	2.99
Indiana Jones	2.99
Jackal	2.50
Johnny Reb 2	2.00
Kinetic	1.50
Knightmare	2.50
Killed Until Dead	2.99
Legions of Death	2.99
Lazertag	2.99

AMSTRAD SPECIAL OFFERS

Leviathan	1.99
Livingstone	1.99
Mermaid Madness	0.99
Magnetron	2.99
Mario Bros	2.99
Mutants	1.99
Mag Max	2.99
Mystery of the Nile	1.99
Nemesis Final Challenge	2.75
Nexor	1.50
Nether Earth	2.99
Out of this World	1.25
Prodigy	0.99
PHM Pegasus	6.99
Predator	5.99
Platoon	6.00
Pulsator	1.25
Quartet	2.99
Passengers on Wind 1	2.99
Passengers on Wind 2	2.99
Rampage	2.99
Ramparts	1.99
Red Scorpion	1.99
Road Runner	2.99
Renegade	3.95
Rygar	3.95
Rana Rama	1.99
Red Led	2.99
Rocky Horror	1.99
Artura	7.25

AMSTRAD SPECIAL OFFERS

Starglider	3.99
Star Fox	1.99
Solomons Key	2.99
Star Raiders II	1.99
Shogun	2.99
Skate Crazy	6.95
Space Harrier	3.95
Spy v Spy A. An	1.99
Survivor	2.50
Shockway Rider	1.50
Strike	0.99
Supersprint	2.99
Samuri Trilogy	2.50
Target Renegade	6.00
G.B. Air Rally	2.99
Trap Door	1.70
Through the Trap Door	2.99
Thundercats	3.50
Thing Bounces Back	1.99
Throne of Fire	1.99
Thing on a Spring	1.50
Village of Last Soul	5.95
World Games	2.99
Warlock	1.75
Wonderboy	4.95
Yogi Bear	1.99
Xarq	0.99
Zynaps	2.99
Sidewalk	2.99
Yie Ar Kung Fu II	2.99

PAY THAT LITTLE EXTRA FOR A FAR BETTER SERVICE

P&P on all orders under £5.00 – 50p, over £5.00 P&P FREE

(No overseas orders please)

We now offer a faster service than ever before

All orders sent 1st Class post

AMSTRAD COMPILATIONS

BIG 4 VOL 2

Thanatos, Deep-strike, Sigma 7, Saboteur 2

ALL FOUR GAMES ONLY £3.95

CONFLICTS 1

Battle of Britain
Tobruk
Theatre Europe

£5.95

TRIO HIT PACK

Great Gurianos
Airwolf 2
3DC

SPECIAL PRICE ONLY £3.95

AMSTRAD COMPILATIONS

KNIGHT ORC

Loosed Orc
A Kind of Magic
Hordes of the Mountain King

RRP £14.95 OUR PRICE £6.95

TAITO COIN OPS

Rastan
Flying Shark
Bubble Bobble
Arkanoid 2
Slapfight
Legend of Cage
Arkanoid
Renegade

EIGHT ALL TIME FAVOURITES ONLY £8.95

AMSTRAD COMPILATIONS

SUPREME CHALLENGE

Elite, Starglider
Tetris, Ace 2
Sentinel

WOW! MEGA PRICE £9.50

PRESTIGE COLLECTION

Rescue on Fractalus
The Eidolon
Koronis Rift
Ballblazer

ALL 4 GAMES £2.99

MAG 7

Wiz Ball, Short Circuit, Arkanoid
Head Over Heels
Cobra, The Great Escape, Yie Ar Kung Fu, Frankie Goes To Hollywood

8 OCEAN GAMES £6.99

AMSTRAD COMPILATIONS

SUMMER GOLD

10th Frame
Dambusters
Bruce Lee
Beechhead II
Rebel Planet
Impossible Mission

ON OFFER AT £3.99

Trivial Pursuits
Baby Boomer

£4.95

Trivial Pursuits
Young Players

£4.95

Super Hang On'
RRP £9.95

Our Price £3.95

BE QUICK!!!

ACCESSORIES

PRO 5000 CLEAR JOYSTICK RRP £14.95 OUR PRICE £10.50

PRO 5000 BLACK JOYSTICK RRP £13.95 OUR PRICE £9.50

AMSTRAD CASSETTES– JUST ARRIVED

GB Air Rally
Our Price £2.99

Trivial Pursuits
Baby Boomer
Our Price £4.95

Trivial Pursuits
Young Players
Our Price £4.95

Not a Penny More
Our Price £3.95

Super Hang On
Was ~~£9.95~~
Our Price £3.95

AMSTRAD DISC

LAST FEW

Sorceror (6128 only)	6.95
Stationfall	6.95
Suspect	6.95
Ballyhoo	6.95
Cutthroats	6.95
Hollywood Hijinx	6.95
Druid 2	2.00
Ninja Hampster	2.00
Firetrap	2.00
Warlock	2.00
Catch 23	2.00
Bridge	2.00
Nemesis	2.00

ALL TOP TITLES STOCKED! PHONE NOW!

10 LINERS

WIN up to £10!

Send YOUR 10-liners to:
CPC Computing,
Europa House, Adlington Park, Adlington,
Macclesfield SK10 4NP.

A REAL mismatch of routines makes up this month's batch of 10 Liners, which consists of a mathematical function plotter, a prime number calculator, and the almost obligatory arcade games.

£5 WINNER

SIEVE OF ERATOSTHENES

By Simon Benge

PRIME numbers have fascinated mathematicians for thousands of years, and several methods have been devised for calculating them. Even as you read this, super computers in American universities are working flat out to find the next highest prime number, which is probably too big to be of any use.

One popular way of finding primes is to use the sieve method discovered by the ancient Greek Eratosthenes. This involves writing a list of numbers from one to any limit, for instance:

```
 1  2  3  4  5  6  7  8  9 10
11 12 13 14 15 16 17 18 19 20
```

We now simply remove every second number after two, every third number after three, and so on.

When this process is complete, we'll be left with the prime numbers:

```
1  2  3  5  7  11  13  17  19
```

Simon's version will handle a maximum list of 4000 numbers, and takes a little over two minutes to find them all. This limit of 4000 is set by the memory available on the CPC464.

LINE CHSUM	LINE CHSUM
10 = 38208	60 = 14432
20 = 03552	70 = 06624
30 = 05248	80 = 64800
40 = 32416	90 = 18784
50 = 43168	100 = 61952

Get it right!

```
10 REM Prime number sieve
20 CLEAR:MODE 2:INPUT "Prime limit ?"
,nos:DIM prime(nos):DIM results(nos):
count=1:number=2
30 FOR f=1 TO nos:prime(f)=f:NEXT f:P
RINT "PRESS ANY KEY TO START CLOCK:":
WHILE INKEY$="":WEND:tim=TIME
40 FOR loop=1 TO nos:FOR seive=2*numb
er TO nos STEP number:prime(seive)=0:
NEXT seive:number=number+1:NEXT loop
50 res=1:FOR f=1 TO nos:IF prime(f)=0
 THEN GOTO 70
60 results(res)=prime(f):res=res+1
70 NEXT f
80 tot=(TIME-tim)/300:PRINT "Time tak
en=";tot;"secs"
90 PRINT "PRESS ANY KEY TO LIST NUMBE
RS:":WHILE INKEY$="":WEND
100 FOR f=1 TO res-1:PRINT results(f)
;"";:NEXT f
```

£10 WINNER

POLAR CURVES

By Maurizio de Cesare

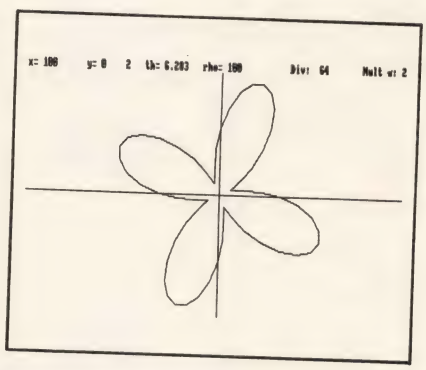
POLAR graphs form a continuous line around the origin – the point where X and Y axes cross. The mathematical function used to plot the shape is held in line 50, and this can be changed by altering everything after the = sign to one of those shown in Table I.

2*th	80*(COS(th)–0.5)
80*SIN(th)	40*(COS(2*th)–1)
80*COS(2*th)	50*(COS(2*th)–0.5)
80	80*COS(3*th)
70+10*COS(6*th)	2*EXP(th/6.28)
70+10*COS(12*th)	70–40*SIN(2*th)
60+30*COS(6*th)	50–40*SIN(3*th)
60+30*RND(1)	50–40*SIN(th*th)

Table I: Other polar functions

When running the program you'll be asked to enter the number of divisions and multiples of Pi. For best results the divisions should be either 64 or 128, and the multiples either one, two, four or eight.

The variable *rho* is the distance from the current point on the curve to the origin. *th* is the angle between *rho* and the X axis. If all this sounds a bit dry, type it in and see the flower-like graphs the program generates.



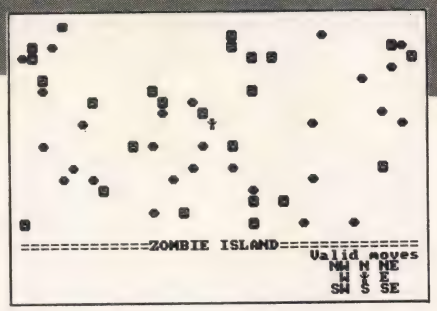

```
10 REM POLAR CURVES
20 REM by de Cesare Maurizio
30 ZONE 80:MODE 2:BORDER 0:INK 0,0:IN
K 1,19:DEFINT n:c=0:c$=CHR$(13):i$=CH
R$(24):SYMBOL AFTER 32:SYMBOL 42,0,0,
0,24,24,0,0,0:SYMBOL 255,0,0,1,126,18
2,54,54,0:LOCATE 20,1:PRINT i$"POLAR
CURVES"i$ " by de Cesare Maurizio - I
taly"
40 PRINT,:INPUT"   Number of division
s: ",n:PRINT,:PRINT"   Interval in mu
ltiples of "CHR$(255)": ";:INPUT mpi:
PRINT,:INPUT"   Text output ? [Y/N] "
,z$:PRINT,:INPUT"   Axes ? [Y/N] ",a$
:in=mpi*PI:pa=in/n:IF UPPER$(a$)="Y"
THEN c=1
50 DEF FN rho(th)=50-40*SIN(4*th)
60 CLS:ORIGIN 320,200,639,0,383,16:PL
OT -320,0,c:DRAWR 640,0:PLOT 0,-200:D
RAWR 0,400:LOCATE 55,1:PRINT"Div: ";n
:LOCATE 70,1:PRINT"Mult "CHR$(255)":"
;mpi:RAD:FOR th=0 TO in+0.01 STEP pa:
rho=FN rho(th)*2:x=rho*COS(th):y=rho*
SIN(th):xp%=CINT(x):yp%=CINT(y)
70 IF UPPER$(z$)="Y" THEN LOCATE 1,1:
PRINT"x=";ROUND(x,3);"   ";:LOCATE 13
,1:PRINT"y=";ROUND(y,3);"   ";:LOCATE
 25,1:PRINT"th=";ROUND(th,3);"   ";:L
OCATE 37,1:PRINT"rho=";ROUND(rho,3);"
   "
80 IF th<>0 THEN DRAW xp%,yp% ELSE PL
OT xp%,yp%,1
90 NEXT th:LOCATE 1,25:INPUT"Again [Y
/N] ",z$:IF UPPER$(z$)="Y" THEN RUN E
LSE END
```

LINE CHSUM	LINE CHSUM
10 = 42240	60 = 64704
20 = 11648	70 = 10112
30 = 51200	80 = 45248
40 = 08192	90 = 49440
50 = 54528	

Get it right!

ZOMBIE ISLAND

by Patrick Beautement



MOST arcade games rely too heavily on superb reactions mixed with a touch of luck. Patrick obviously became a little fed up with this, and he has written a short game that requires a bit more thought.

You are stuck on a small island which, as you've probably guessed, is inhabited by zombies. These move closer and closer to you, and your only chance of survival is to lead them into the pits scattered about. These kill zombies falling into them.

Movement is controlled by entering the compass direction when asked. The zombies will then all move one place towards you, and if you've chosen correctly a couple of them will fall to their deaths. If two zombies bump into each other, one of them will be obliterated.

You aim is to last as long as possible, and try to kill them all off. If you manage it, you'll move on to the next screen. A fair amount of thought and planning is required to survive in this extremely addictive game.

```
10 DEFINT a-z:c$="NE,SW,SE,NW":RANDOM
IZE TIME:DIM z(30),e(30),g(30),h(50),
j(50):MODE 1:INK 0,0:INK 1,1:INK 2,6:
INK 3,26:PAPER 3:CLS:PEN 0:LOCATE 1,2
1:PRINT STRING$(40,"="):LOCATE 30,22:
PRINT"Valid moves":LOCATE 32,23:PRINT
"NW N NE":z$=CHR$(225):d$="died!"
20 m$=CHR$(248):LOCATE 33,24:PRINT"W
";m$;" E":LOCATE 32,25:PRINT"SW S SE"
:n=14+(RND*15):a=n:w=19+(RND*30):f=0:
q=0:PEN 2:FOR c=1 TO n:z(c)=1:e(c)=1+
(RND*39):g(c)=1+(RND*19):LOCATE e(c),
g(c):PRINT z$:NEXT:PEN 0:FOR c=1 TO w
:h(c)=1+(RND*39):j(c)=1+(RND*19)
30 LOCATE h(c),j(c):PRINT CHR$(231);:
NEXT:LOCATE 14,21:PRINT"Thinking ...
":FOR c=1 TO n:FOR d=1 TO w:z(c)=1+((
e(c)=h(d)) AND (g(c)=j(d))):a=a+(z(c)
=0):NEXT d,c:x=1+(RND*39):y=1+(RND*19
):LOCATE 14,21:PRINT"ZOMBIE ISLAND":L
OCATE x,y:PEN 1:PRINT m$
40 LOCATE 1,22:PRINT CHR$(7);:INPUT "
Your move :";g$:g$=UPPER$(g$):IF INST
R(c$,g$)=0 THEN PRINT"Try again":GOTO
 40 ELSE FOR d=22 TO 25:LOCATE 1,d:PR
INT SPACE$(29):NEXT:LOCATE x,y:PRINT"
 ":y=y+(g$="N")-(g$="S")+(g$="NW")-(g
$="SW")+(g$="NE")-(g$="SE")
50 x=x-(g$="E")+(g$="W")-(g$="NE")+(g
$="NW")-(g$="SE")+(g$="SW"):FOR c=1 T
O w:IF x=h(c) AND j=j(c) THEN 100 ELS
E NEXT c:FOR c=1 TO n:IF z(c)=1 AND x
=e(c) AND y=g(c) THEN 100 ELSE NEXT c
:LOCATE x,y:PRINT m$;:FOR c=1 TO n:IF
 z(c)=0 THEN 90
60 LOCATE e(c),g(c):PRINT" ";:r=(-1*(
x>e(c)))+(1*(x<e(c))):v=(-1*(y>g(c)))
+(1*(y<g(c))):e(c)=e(c)+r:g(c)=g(c)+v
:FOR d=1 TO w:IF e(c)=h(d) AND g(c)=j
(d) THEN f=1:GOSUB 100:z(c)=0:a=a-1
70 NEXT d:FOR s=1 TO n:IF c=s OR z(c)
=0 OR z(s)=0 THEN 80 ELSE IF e(c)=e(s
) AND g(c)=g(s) THEN z(s)=0:PEN 2:LOC
ATE 1,22:PRINT"One zombie squashed an
other2;:q=1:gosub 100:a=a-1:for d=1 t
o 50:next d:locate 1,22:?space$(29)
80 NEXT s:IF e(c)=x AND g(c)=y THEN P
EN 2:LOCATE e(c),g(c):PRINT z$:q=1:GO
SUB 100:GOTO 100 ELSE k=(z(c)<>0):WHI
LE k:LOCATE e(c),g(c):PEN 2:PRINT z$;
::SOUND 1,1000,15,12,0,0,30:k=0:WEND
90 NEXT c:PEN 1:IF a<=0 THEN d$="WON!
":GOTO 100 ELSE FOR d=22 TO 25:LOCATE
 1,d:PRINT SPACE$(29):NEXT:GOTO 40
100 IF f=1 THEN FOR t=0 TO 18:SOUND 2
,16+(t*35),5,12:NEXT:f=0:RETURN ELSE
IF q=1 THEN SOUND 3,4000,10,12,0,0,10
:q=0:RETURN ELSE PEN 1:LOCATE 1,23:PR
INT"You ";d$;:LOCATE 1,24:PRINT"Press
 spacebar to play":WHILE INKEY$<>" ":
WEND:RUN
```

LINE	CHSUM	LINE	CHSUM
10	27392	60	49120
20	21344	70	43648
30	34016	80	23200
40	42368	90	43200
50	55520	100	32160

Get it right!

MONSTER MAZE

BY Peter Timming

PURSUING baddies around a maze is nothing new, but this game includes another monster chasing you. The object is to place a cross on a continually moving face, at the same time as avoiding the guardian who's hell bent on your destruction.

Your movement is controlled by the Z, X, < and > keys, and when the cross is positioned on the face, press the spacebar to kill him. Whether you win or lose, the length of time you lasted will be displayed. The guardian can be trapped by the blocks in the maze, but you'll need quick reflexes and plenty of luck if you're to succeed.

```
10 DEFINT a-z:MODE 1:DIM scr(41,26):B
ORDER 0:INK 0,0:INK 1,26:INK 2,15:INK
 3,24:ENT 1,8,-3,1:PEN 3:FOR n=1 TO 9
0:bx=RND*38+1:by=RND*23+1:LOCATE bx,b
y:PRINT CHR$(233):scr(bx,by)=3:NEXT
20 x=12:y=12:LOCATE x,y:PRINT CHR$(20
3):ax=RND(1)*38+1:ay=RND(1)*24+1:LOCA
TE ax,ay:PRINT CHR$(225):cx=RND*38+1:
cy=RND*23+1:LOCATE cx,cy:PRINT CHR$(1
78):t!=TIME
30 CALL &BD19:LOCATE x,y:PRINT CHR$(1
6):LOCATE ax,ay:PRINT CHR$(16):LOCATE
 cx,cy:PRINT CHR$(16)
40 IF INKEY(69)=0 AND scr(x,y-1)<3 AN
D y<>1 THEN y=y-1 ELSE IF INKEY(71)=0
 AND scr(x,y+1)<3 AND y<>25 THEN y=y+
1 ELSE IF INKEY(39)=0 AND scr(x-1,y)<
3 AND x<>1 THEN x=x-1 ELSE IF INKEY(3
1)=0 AND scr(x+1,y)<3 AND x<>40 THEN
x=x+1
50 IF INKEY(47)=0 AND ax=x AND ay=y T
HEN mm$="You destroyed the enemy":GOT
O 90 ELSE IF INKEY(47)=0 THEN SOUND 1
,78,15,7,0,1
60 IF RND>0.5 AND scr(ax-1,ay)<3 AND
ax<>1 THEN ax=ax-1 ELSE IF RND<0.5 AN
D scr(ax+1,ay)<3 AND ax<>40 THEN ax=a
x+1 ELSE IF RND<0.5 AND scr(ax,ay-1)<
3 AND ay<>1 THEN ay=ay-1 ELSE IF RND<
0.5 AND scr(ax,ay+1)<3 AND ay<25 THEN
 ay=ay+1
70 IF x<cx AND scr(cx-1,cy)<3 AND cx<
>1 THEN cx=cx-1 ELSE IF x>cx AND scr(
cx+1,cy)<3 AND cx<>40 THEN cx=cx+1 EL
SE IF y<cy AND scr(cx,cy-1)<3 AND cy<
>1 THEN cy=cy-1 ELSE IF y>cy AND scr(
cx,cy+1)<3 AND cy<>25 THEN cy=cy+1
80 CALL &BD19:PEN 1:LOCATE x,y:PRINT
CHR$(203):PEN 2:LOCATE ax,ay:PRINT CH
R$(225):PEN 3:LOCATE cx,cy:PRINT CHR$
(178):f!=FRE(""):IF cx=x AND cy=y THE
N mm$="The guardian caught you":GOTO
90 ELSE 30
90 FOR n=1 TO 20:WHILE SQ(1)>127:WEND
:SOUND 1,RND*50,7,7,0:NEXT:CLS:PEN 1:
PRINT mm$:PEN 2:PRINT"Time elapsed:"R
OUND(((TIME-t!)/300),3)"seconds":PEN
3:PRINT"Press space to start again":W
HILE INKEY(47)=-1:WEND:RUN
```

LINE	CHSUM	LINE	CHSUM
10	44992	60	14240
20	18208	70	08448
30	63360	80	50048
40	05312	90	49664
50	43072		

Get it right!

Getting to grips with CP/M

Phil Lawson takes a Z80 programmer's view of CP/M, and identifies some of the highlights and pitfalls

HOW does a CP/M program differ from any other piece of Z80 machine code? Answer – it doesn't, except that it's automatically loaded at, and run from, address &0100 when you enter its name.

It follows that a program assembled to start at this address using the instruction:

```
ORG &0100
```

and named with the extension *.com* is treated as a command file.

One point to watch out for is that once a file is loaded control immediately passes to address &0100. For this reason you should ensure that any data within the program isn't placed at the beginning, otherwise it would be executed as code, resulting in a crash.

CPC464/664 machines come with CP/M version 2.2, although version three (or Plus as it is known) comes as an extra with the CPC6128. As far as the programmer is concerned there are not many differences between the two, and a program written to run under CP/M2.2 should run on CP/M Plus. The reverse isn't always true, as Plus supports a larger area in which to run programs – TPA, transient program area – and has a few extra facilities.

One of these I'll mention now, as it's a point of contact between CP/M and the Amsdos we all know and love. CP/M2.2 doesn't support any firmware routines, while Plus allows you to access quite a few. This may seem like a catastrophe, but it isn't.

The idea behind CP/M is to write software which is portable between the machines which support it, and if you use firmware calls you make your program specific to the CPC6128. If you are using CP/M solely to gain access to something like random access filing and don't intend your program to run on another machine, this is acceptable.

CP/M has a set of calls roughly equivalent to the Amsdos firmware, even if they are limited in scope. What I aim to do in this article is, by a few simple examples, show how easy it is for a machine code programmer of modest abilities to start writing CP/M programs.

Control Program for Microprocessors – CP/M – was devised to provide a standard interface to disc-based computer systems for users and programmers. Over the past decade it has been improved so much that, with the extra commands and utilities bundled in, it's become more of a programmer's tool than just an operating system.

In CP/M, routines and programs are called commands, and can easily be recognised by the *.com* extension to their filenames. To execute them simply enter their name at the A> prompt, omitting the *.com* part.

What makes CP/M so popular is that programs written for one machine can be transported to another with little or no modification. This means that once you have CP/M installed on your micro, a whole host of software packages becomes available.

Using the freebies

All the routines listed have been written in Z80, but it's possible that some of you don't have access to a Z80 assembler. Luckily, a primitive 8080 assembler is included on your CP/M disc.

For this reason, the examples show both formats of assembly code, Z80 in the left column, and 8080 in the right.

Also included on the master disc is a limited editor called ED.COM. Here's a brief summary of how to use it.

The first thing to do is enter:

```
ED filename.asm
```

which runs the editor, and makes it save the data under the specified filename. The *.asm* extension shouldn't be omitted, as its presence is required by the assembler later on.

When the * prompt appears enter **i** for insert, and start entering the instructions, pressing Enter/Return after each one. When all the code has been typed in, Ctrl+X will take you back to the *. Entering **e** will now save the data under the given filename, and return you to the A> prompt. Alternatively, bald chested non-masochists can use their word processor and save the files as plain vanilla Ascii.

To assemble the code make sure ASM.COM is on the same disc and enter:

```
ASM filename
```

Various files will then be produced. The one of most interest to us has the extension *.hex*, as it's this one we use to produce the *.com* file. Table I shows how hex files are constructed, each line of which which follows the structure:

```
:Bytes Address Type Data Checksum
```

The way to generate a *.com* file depends on whether you're using CP/M2.2 or Plus. Under CP/M2.2 we make use of another utility that comes on the system disc – LOAD.COM – which simply creates a *.com* file, with the same name as the specified *.hex* file, for instance:

```
LOAD filename.hex
```

will produce *filename.com*.

With CP/M Plus you still use a utility on the system disc, but this time it's HEXCOM. Use this in a similar way:

```
HEXCOM filename
```

which will produce *filename.com*.

Down to business

That's the theory over and done with, lets start doing something. Examining Table II reveals some of the input and output routines available to us. We'll use these to write a small program to accept a character from the keyboard and display it on the screen.

To execute a CP/M function we have to set up registers with entry values, and CALL a particular address. For all Bdos functions this is &0005, which selects the correct routine depending upon the value of the C register. The computer will execute your command and eventually return to the address immediately after the CALL &0005

```
:080100005702CDC101FEFFC280
:0000000000
No of bytes –  &08
  Start addr –  &0100
        Type –  &00
        Data –  &57 to &C2
   Checksum –  &80
```

Table I: Example format of HEX files

Bdos	Function	Entry Parameters	Returned Parameters
0	System reset	C=00H	None
1	Console input	C=01H	A=Character
2	Console output	C=02H,E=Char	None
3	Auxiliary input	C=03H	A=Character
4	Auxiliary output	C=04H,E=Char	None
5	List output	C=05H,E=Char	None
9	Print string	C=09H,DE=String Address	None

Table II: Some useful Bdos function calls

instruction. Load your editor, enter Listing I and, when you're sure there are no errors in your typing, assemble the code.

Some assemblers will create a *.com* file automatically, and will require you to insert whatever commands are necessary to specify the resulting filename.

Other assemblers should at least allow you to generate a hex file, which can be converted with LOAD or HEX.COM. If the worst comes to the worst, use ASM.

```
    Z80             8080

ORG &0100       ORG 256
LD C,1          MVI C,1
CALL &0005      CALL 5
LD E,A          MOV E,A
LD C,4          MVI C,4
CALL &0005      CALL 5
RET             RET
```

Listing I

First of all the program tells the assembler to begin the code at address &0100. We then use function one to wait until a key has been pressed, which then returns the Ascii value of that key in the A register. This value is transferred to E, and function four is called to display it on the screen.

Assuming you have managed to produce a *.com* file, enter its name (without the *.com*) and it will load and execute. When the drive light stops flashing, press any key on the keyboard – preferably in the range of A to Z. You should see the corresponding letter displayed on the screen, and the A> prompt will reappear, awaiting your next command.

This may not seem very spectacular, but rejoice anyway. You've just written your very first CP/M program, something to be proud of indeed.

Function four could be used to print a string of characters one at a time, but this would be rather longwinded. Fortunately another function is available for this purpose, as shown in Listing II. Only two things need to be set up before using this function – the address of the start of the string in DE, and the function number in C.

```
    Z80             8080

ORG &0100       ORG 256
LD DE,STRING    LXI D,STRING
LD C,9          MVI C,9
CALL &0005      CALL 5
RET             RET

.STRING         STRING
 DEFB "Hello$"  DB 'Hello$'
```

Listing II

The dollar sign at the end of the word Hello tells function nine to stop printing characters and return to the calling program. If we required this symbol in the text we would have to make use of function four, as described earlier.

Printing plain text may seem a little restrictive, so fortunately the normal control codes are accessible. Listing III shows how we'd go about setting the pen, paper and ink.

```
    Z80             8080

ORG &0100       ORG 256
LD DE,SETINK    LXI D,SETINK
LD C,09         MVI C,9
CALL &0005      CALL 5
LD DE,SETPAPER  LXI D,SETPAPER
LD C,09         MVI C,9
CALL &0005      CALL 5

LD DE,SETPEN    LXI D,SETPEN
LD C,09         MVI C,9
CALL &0005      CALL 5
LD E,12         MVI E,12
LD C,02         MVI C,2
CALL &0005      CALL 5
LD DE,PRINT     LXI D,PRINT
LD C,09         MVI C,9
CALL &0005      CALL 5
RET             RET


.SETPEN         SETPEN
 DEFB 15,01,"$" DB 15,01,'$'
.SETPAPER       SETPAPER
 DEFB 14,00,"$" DB 14,00,'$'
.SETINK         SETINK
 DEFB 28,00,02,06 DB 28,00,02,06
 DEFB 28,01,26,00 DB 28,01,26,00
 DEFB "$"       DB '$'
.PRINT          PRINT
 DEFB "message$" DB 'message$'
```

Listing III

Not into machine code?

Don't panic! Assembly language isn't the only way of programming under CP/M. In fact there are more languages available to run under CP/M than there are under Amsdos. And what's more, many of them are in the public domain, and can be picked up for a nominal fee from a PD library.

You might like to try your hand at compiled Basic, Pascal, C, Cobol, Forth, Mumps, or any number of other languages ranging from the well known to the totally obscure. At a few pounds per disc you have little to lose.

Alternatively, you might like to contact Locomotive (0306 887902) which sells Mallard Basic to run under CP/M. It is not unlike Locomotive Basic except that it substitutes very advanced random access filing for graphics and sound.

Hisoft (0525 718181) markets a range of languages, and it's worth noting that these include a compiled Basic, Modula 2, Pascal, and a slightly non-standard C (mainly due to the lack of floating point arithmetic) which comes with an Amsdos version.

Bdos function two prints single characters on the screen in a similar way to function four, except that it allows non-printable characters – or control codes – to be used. In Listing III we use this to clear the screen with control code 12. Table III shows a list of the other codes used, along with their Basic equivalent. There are 30 control codes, as shown in the user guide.

Now you've seen how simple it is to write command files, perhaps you'll take CP/M more seriously. It is especially worth investigating if you hope to move up in the world to MSdos as found on the Amstrad PC and other IBM clones, as there are many similarities.

● *We've only managed to scratch the surface of CP/M, but you should feel confident enough to tackle the subject a little further on your own. We would like to know how much interest there is in CP/M programming, so please write and let us know if you would like to see more, particularly CP/M Plus which we haven't covered before.*

Control code	Basic equivalent
15,01	PEN 1
14,00	PAPER 0
28,00,02,06	INK 0,2,6
28,01,26,00	INK 1,26,0

Table III: The control codes used

Create a small world!

Make your own mini adventures with CLIVE GIFFORD's time-saving utility

LOVE 'em or hate 'em, adventures are here to stay. What started as a massive program hidden in a university mainframe has become a boom industry with millions of followers. We have previously printed several mini-adventures which have proved quite popular. So if you fancy a go at writing your own but can't manage the programming, let Scribe do the hard work for you.

The idea is that you design your adventure and type the information into Scribe, which will then run it for you. Before using the utility, however, it's a good idea to produce a plan of the game along with a table of object names and starting locations, as shown in Figure I. When this has been completed you can begin to input the data.

Firstly you need to enter the number of objects and locations that will make up the adventure. Then every object's data is typed in, and this takes the form of the name followed by a comma and the location number.

You'll then have to say whether or not the object can be taken, with 1 meaning yes and 0 no. Specifying a negative value will cause that much damage when the player attempts to take the object.

As some locations may include doors or gates that require unlocking, we have to say if an object is a key or similar device. This is done at the next prompt by entering 2, and care should be taken not to end up with a key that's needed to open a door but cannot be picked up.

Once finished, it's time to enter the descriptions of the locations along with the directions in which movement is allowed. When the descriptive part of a location has been typed in you'll be prompted for every one of the six possible directions.

In Figure I, travelling north from the forest puts us next to a gate, whereas south takes us to the clearing. To enter this information we input the location numbers, which in this case are 3 for north, and 2 for south. It isn't possible to travel in the other four directions – East, West, Up and Down – so we enter the value zero.

Examining location three shows the presence of a gate, which by its very nature will require some action before allowing us to progress westward. This is done by turning the value for west into a negative number, in this case −4. There is no need to set a negative value for east in location four, as the gate must have been opened for us to get there.

Only two things remain to be entered, the first of which is the player's initial strength. This value is decreased each time a command is accepted, and trying to take

PRODUCE PICTURES LIKE THESE IN "MINUTES"
USING A DMP2000/2160/3000/3160 PRINTER AND THE

DART SCANNER

A remarkable new image scanning system which enables you to recreate & store pictures, documents, drawings, photographs etc.

- **No camera or video source needed** Simply feed your original into DMP2000/ 2160/3000/3160 printer (does not affect normal printing operations).
- **Compatible with AMX Pagemaker** and any light pen or mouse which works with standard screen format
- **For all CPC computers**

Features:
Scan – Magnification x1, x2, x3, x6
Print – Full Size/Half Size, Load & Save to Tape or Disc, Area Copy, Scrolling Window, Zoom Edit, Box/Blank, Clear Area, Add Text, Flip Screen, On screen Menu.

Applications:
Advertising/Artwork, Letterheads/Logo's, Newsletters & Leaflets, Games Screens.

Package Comprises:
Scanner head, Interface, Software on Cassette or Disc

R.R.P. £79.95
Including VAT and P&P

DART Electronics

Unit B5
Oulton Works
School Road
LOWESTOFT
Suffolk NR33 9NA

Telephone: (0502) 513707

Trade & Export enquiries also welcome

damaging objects will decrease it even further.

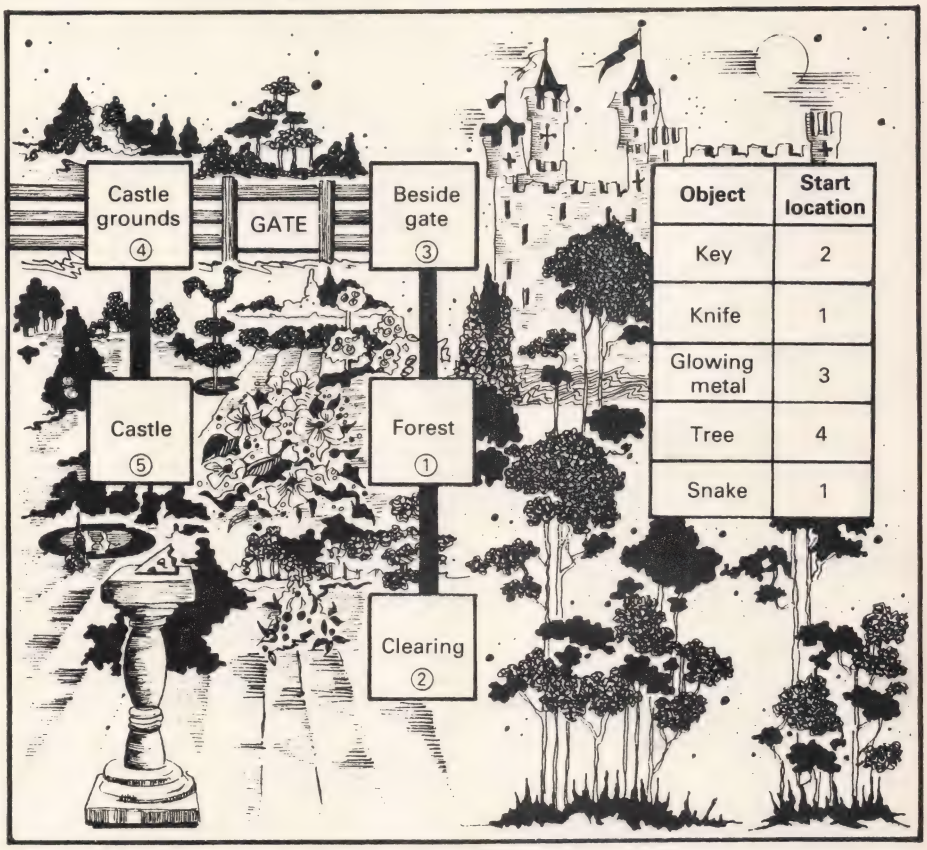
The objective is to reach a certain location before your strength falls to zero. This location is the last thing to be entered when setting up the adventure.

The program shows some of the more useful tips for adventure writers, including how to treat the player as a location – in this case location 0. This allows objects to be taken and dropped simply by altering their location number.

As the routine is rather short you may wish to enhance it a little, adding extra commands, a save and load routine or a few monsters to bash.

If you wish to attempt the built-in adventure – Enchanted Castle – before entering your own data, type Y at the *pre-programmed data* prompt. The currently available commands are North, South, East, West, Up, Down, Take, Drop, Unlock and Quit. To use the Take and Drop instructions, first enter the command, press Return, and when asked, enter the object's name.

Turn to Page 28 ►



Object	Start location
Key	2
Knife	1
Glowing metal	3
Tree	4
Snake	1

Figure I: Adventure plan with object starting locations

DEMON DEVELOPMENT CARTRIDGE

The Utimate machine code tool. Suitable for 464/664 and 6128 machines. Demon will give you full control of your Amstrad. Stop Any program Anytime by a press of a button, the memory remains intact and can be saved to Tape/Disc, debugged, traced, moved, disassembled etc. Inline Z80 assembler, Bank switching for 6128 machines etc. etc. More functions than ANY other unit of this type on the market.

Demon Cartridge with user manual only £24.95 (note no through connector).

EPROM PROGRAMMER

Transfer your favourite programs onto Eprom.
Suitable for 464/664 and 6128 machines.

- Programs 2764 and 27128 type Eproms.
- Switchable for 12.5 or 21 volt types
- Normal or Fast algorithmn programming
- Powerful but easy to use software
- Rom to Rom copy, Editing, Verification. Single or block programming.
- Full screen Editing for BIN files
- Completely self-contained in smart impact resistant case. (No messy separate power supply)
- 12 months parts and labour guarantee

Eprom Programmer, Software & 12 months guarantee Only £39.95
Available in kit form with through edge connector (uncased) £31.25
Blank 16k Eproms available phone for latest prices

EPROM EXPANSION BOARD

Holds 4 EPROMS. Suitable for Maxam, Protext, Utopia etc, etc.
Top quality silk screen-printed PCB measures 7cm x 12cm approx with through edge connector to allow the use of Disc (464) or other peripherals.

Complete Kit of parts, with instructions to build it yourself £16.75
Ready built and tested only £21.95

PCB DESIGNER III

Design double side printed circuit boards quickly and easily with this powerful software. Used by universities and government establishments. Some of the main features are:-
Double sided 200mm x 131mm (8" x 5.25") board.
Nine print options for standard Epson or compatible printer (DMP 2000).
Predefined DILS, IDCs from 8pin to 64 pin, horizontal or vertical placing.
SIngle pads, lines, blocks and edge connectors at the touch of a key.
Auto Routing and common bussing.
Suitable for microprocessor and related projects.
Minimum system requirements to run this software are:- Amstrad 464 Mono Monitor and Printer.
Supplied on cartridge (just plug in and go) only **£89.95** (note no through edge connector). Evaluation cartridge with Save & Load routines removed only
£25.00 refundable against purchase of main cartridge

PASCAL COMPILER ROM

Our Pascal compiler is easy to use, suitable for the absolute beginner and produces stand alone Machine code. Does NOT require CPM. A built in text editor and combined compiler makes the program easy to use. The user manual supplied will teach you how to write programs and contains many examples, these include games and useful utilities.The compiler produces very fast machine code for example:- BASIC PLOTx,y (10000 times) 12.46 secs Pascal Plotxy (10000 times) 2.1 secs. Supplied on Eprom with user manual only **£19.95** or Cartridge **£24.95**

Many other items in stock including Public Domain CPM software at £2.50 per disc.

Access

JOHN MORRISON Dept. CPC
4 Rein Gardens, Tingley, West Yorkshire, WF3 1JR
Telephone: (0532) 537 507
Return of post service on Access or POs. Please allow 3 days for cheques

K & M COMPUTERS

THE LEADING AMSTRAD MAIL ORDER SPECIALISTS
* THE FASTEST * FRIENDLIEST * SERVICE AVAILABLE *

"AMSOFT 3" DISCS £2.50 Each *£21.95 For TEN * DMP 2000/2160 RIBBONS £3.99 Each* £6.99 For TWO"

ADVENTURE	CASS	DISC
Time and Magik	£10.90	£10.90
The Pawn (6128)	–	£14.45
Guild of Thieves (6128)	–	£14.45
Jinxter (6128)	–	£14.45
Jack the Ripper	£6.99	–
Corruption (6128)	N –	£14.45
Silicon Dreams	£10.90	£14.45
Jewels of Darkness	–	£14.45
Not a Penny More	£10.90	£14.45
Mindfighter	£10.90	£14.45
Gnome II: Ingrids Back N	–	£14.45
Lancelot	£10.90	£14.45
COMPILATIONS		
Taito Coin-ops	£9.90	–
Fists & Throttles	£9.90	£13.10
Arcade Force 4	£7.99	£14.45
Pepsi Mad Mix	£6.99	–
Konami Arcade Collection	£7.50	£13.10
Gold, Silver & Bronze	£11.90	£20.90
We are the Champions	£7.50	£13.10
Frank Brunos Big Box	£9.90	£13.10
Game Set and Match	£9.45	£13.10
Supreme Challenge	£9.90	£13.10
Karate Ace	£10.50	£11.90
Six Pack Vol. III	£7.50	£10.90
STRATEGY/SIMULATION		
Football Manager II	£7.50	£10.90
Pirates (6128)	–	£14.45
Arctic Fox	£7.99	£11.90
Gunship	£10.90	£14.45
F15 Strike Eagle	£7.50	£10.90
Pro Soccer Simulator	£7.50	£10.90
D.T. Olympic Challenge	£7.50	£10.90
Track Suit Manager	£7.50	–
W.C.L.B. Famous Courses	–	£8.50
Bards Tale	£7.99	£11.90
P.M.S. Pegasus	£7.99	£11.90
Football Director (464)	£6.99	–
Trivial Pursuit (NEW)	£10.90	£14.45
Football Director II	–	£14.45
Bridge Player 3	£9.99	£11.95
Peter Beardsley	£7.50	£10.90
Steve Davis Snooker	£1.80	£7.99

ARCADE	CASS	DISC
Thunderblade	N £7.99	£11.90
Fair Means or Foul	£7.50	£10.90
Mickey Mouse	£7.99	£11.90
Vindicator	£6.99	£10.90
N. Mansells G.Prix	£7.99	£11.90
Hotshot	£6.99	£10.90
Skate or Die	N £7.99	£11.90
Puffys Saga	N £7.99	£11.90
Bad Cat	£7.99	£11.90
Rambo III	N £7.50	£10.90
Operation Wolf	N £6.99	£10.90
Road Blasters	£7.99	£11.90
Barbarian II	N £7.50	£10.90
Lazer Squad	N £7.50	£10.90
The Dark Side	£7.50	£10.90
Hercules	£7.99	£11.90
R-Type	N £7.50	£10.90
Shackled	£7.99	£11.90
Guerrilla War	£7.50	£10.90
Rimrunner	N £7.50	£11.90
Bushido	N £7.99	£11.90
Gauntlet II	£7.99	–
Dream Warrior	£7.99	£11.90
Salamander	N £6.99	£10.90
Bionic Commando	£7.99	£11.90
Savage	£7.50	£10.90
4x4 Off Road Racing	N £7.99	£11.90
Pink Panther	£7.99	£11.90
Empire Strikes Back	£7.50	£11.90
E.Edwards Ski Jump	£7.50	£10.90
Typhoon	£6.99	£10.90
Captain Blood	£7.50	£10.90
Live & Let Die	£7.50	£10.90
The Train	£7.99	£11.90
Game Over II	£7.50	£10.90
Cybernoid II	£7.99	£11.90
Victory Rd	N £6.99	£10.90
BUDGET		
All £1.99 BUDGET GAMES 5 FOR £8		
European 5 a Side	£1.80	
Battleships	£1.80	
Bomb Jack	£1.80	
Commando	£2.75	

464 UPGRADE ROM
NOW AVAILABLE
ONLY £16.99 FROM US

ACCESSORIES	
Joystick Splitter	£7.99
Multiface II	£44.95
KDS Romboard	£24.95
Lockable 3" disc boxes (60)	£9.99
Cover Set DMP 2000/2160	£4.50
Cover Set 464/6128	£7.50
Keyboard Extension Leads	£7.99
JOYSTICKS	
Pro 5000	£13.95
Amstrad JY2	£13.95
Delta/Joystar	£9.50
Cheetah Challenger	£4.75
Mister Crystal	£15.95
Cheetah Starfighter	£13.95
Konix Navigator	£11.95
Konix Speedking	£9.99
Cruiser (Microswitch)	£9.50
BUS/UTIL	
Rodos (on Rom)	£25.95
Matrix Spreadsheet	£28.95
Masterfile III	£32.95
Discology	£11.95
Professional Adv. Writer	£24.95
Adv. Art Studio	£19.95
Adv. Music System	£24.95
Protext	£20.95
Prospell	£20.95
Promerge	£20.95
Stoppress	£39.95
Plan II	£14.99
Mini Office II	£14.45
HARDWARE	
T.V. Tuner	£72.95
64k Memory Expansion	£47.95
Stoppress & Mouse	£72.95
AMX Mouse & Art	£61.95
DMP2160 Printer	£159.95
DD1 Disc Drive	£159.95

Buy with confidence from the leaders in Amstrad Mail Order. Full range of educational software in stock 50p vouchers sent with every order. Use the vouchers to deduct 50p off further orders over £10
N=New Release Please phone for availability

K&M Computer (CPC),
40, Fairstead,
Birch Green,
Skelmersdale
Lancs, WN8 6RD

When ordering please state make of computer.
Please make cheques & P.O. payable to K&M Computers
Overseas inc. Eire add £1 per item of software
All prices include VAT and P&P. No more to pay.

"24Hrs Phone"
0695 29046

◀ From Page 27

```
10 REM     MINI-ADVENTURE CREATOR
20 REM          By Clive Gifford
30 REM        (C) CPC Computing
40 REM
50 PEN 1:PAPER 0:CLS:INPUT "Pre-progr
ammed data (Y/N)";J$:J$=UPPER$(J$):IF
 J$<>"Y" THEN 230 ELSE b=5:c=b: GOTO
240
60 PRINT:PRINT "PRESS ANY KEY":PRINT:
WHILE INKEY$="":WEND:PRINT STRING$(40
,"-"):PRINT "You are in ";l$(p):PRINT
 "You can move ":FOR t=1 TO 6:IF l(p,
t)>0 THEN PRINT m$(t);"..."
70 NEXT t:z=z-1:IF z<1 THEN PRINT "Yo
u run out of strength":GOTO 220
80 PRINT:PRINT "You can see:":FOR t=1
 TO b:IF p(t,1)=p THEN PRINT p$(t)
90 NEXT:PRINT:PRINT "Strength:";z:PRI
NT "Inventory...";:FOR t=1 TO b:IF p(
t,1)=0 THEN PRINT p$(t);":";
100 NEXT:IF p=e THEN FOR T=1 TO 3000:
NEXT T:PAPER 1:PEN 0:CLS:LOCATE 13,10
:PRINT "You've Done It!!!":END
110 PRINT:INPUT a$:a$=UPPER$(a$):PRIN
T:CT=0:FOR t=1 TO 10:IF a$=m$(t) THEN
 ct=t:t=10
120 NEXT t:IF ct=0 THEN PRINT "No suc
h command":GOTO 60
130 IF ct<7 THEN IF l(p,ct)>0 THEN p=
l(p,ct):PRINT "Moving Now...":GOTO 60
140 IF ct<7 THEN PRINT "Can't move th
at way" ELSE IF ct>6 THEN ON ct-6 GOT
O 160,180,200,220
150 GOTO 60
160 inv=0:INPUT "OBJECT NAME";a$:a$=U
PPER$(a$):FOR t=1 TO b:IF a$=UPPER$(p
$(t)) AND p(t,1)=p AND p(t,2)<>0 THEN
 p(t,1)=0:inv=1:IF p(t,2)<0 THEN p(t,
1)=p:z=z-ABS(p(t,2)):PRINT "OUCH! THA
T LOST YOU STRENGTH"
170 NEXT:IF inv=1 THEN 60 ELSE PRINT
"Not possible":GOTO 60
180 inv=0:INPUT "OBJECT NAME";a$:FOR
t=1 TO b:IF a$=p$(t) AND p(t,1)=0 THE
N p(t,1)=p:inv=1
190 NEXT:IF inv=1 THEN 60 ELSE PRINT
"Not possible" ELSE GOTO 60
200 FOR t=1 TO b:IF p(t,1)<>0 OR p(t,
3)<>2 THEN 210 ELSE FOR y=1 TO 6:l(p,
y)=ABS(l(p,y)):NEXT :PRINT "Any locks
 here now unlocked":FOR t=300 TO 120
STEP-30:SOUND 1,t:NEXT
210 NEXT:GOTO 60
220 PRINT "Goodbye":SOUND 1,300,50:EN
D
230 PRINT:INPUT"HOW MANY OBJECTS DO Y
OU REQUIRE";b:INPUT "AND HOW MANY LOC
ATIONS";c:DIM l$(c),l(c,6),m$(10),p$(
b),p(b,3):PRINT:PRINT
240 CLS:INV=1:P=1:RESTORE:FOR t=1 TO
10:READ m$(t):NEXT:DATA NORTH,SOUTH,E
AST,WEST,UP,DOWN,TAKE,DROP,UNLOCK,QUI
T
250 IF j$="Y" THEN FOR t=1 TO b:READ
l$(t),l(t,1),l(t,2),l(t,3),l(t,4),p$(
t),p(t,1),p(t,2),p(t,3):NEXT:z=20:e=b
:GOTO 60
260 FOR t=1 TO b:INPUT"OBJECT NAME, S
TARTING LOCATION"; p$(t),p(t,1):INPUT
 "CAN OBJECT BE TAKEN (Y=1,N=0,NO & L
OSE  STRENGTH= -AMOUNT OF STRENGTH LO
ST";p(t,2):INPUT "IS THE OBJECT A KEY
 OR SIMILAR =2";p(t,3):NEXT
270 FOR t=1 TO c:INPUT "LOCATION NAME
:";l$(t):FOR y=1 TO 6
280 PRINT m$(y);" = ";:INPUT l(t,y):I
F l(t,y)>c THEN GOSUB 310:GOTO 280
290 NEXT y:NEXT t:PRINT:INPUT "STARTI
NG STRENGTH";z
300 INPUT "END LOCATION NUMBER";e:IF
e<1 OR e>c THEN 300 ELSE GOTO 60
310 PRINT:PRINT "INVALID DATA ENTRY..
.TRY AGAIN":PRINT:PRINT:SOUND 1,300,3
5:RETURN
320 DATA "in the forest",3,2,0,0,"KEY
",2,1,2,"in a clearing",1,0,0,0,"KNIF
E",1,1,0,"by a large gate",0,2,0,-4,"
GLOWING METAL",3,-10,0
330 DATA "in the castle grounds",0,5,
3,0,"TREE",4,0,0,"at the Enchanted Ca
stle",0,0,0,0,"SNAKE",1,-20,0
```

Get it right!

10 = 21376	120 = 03200	230 = 36896
20 = 26528	130 = 18432	240 = 62208
30 = 13760	140 = 01600	250 = 53088
40 = 08224	150 = 53792	260 = 14784
50 = 32224	160 = 43232	270 = 47328
60 = 03008	170 = 64608	280 = 17376
70 = 41824	180 = 24032	290 = 43424
80 = 08000	190 = 63552	300 = 13888
90 = 44800	200 = 63104	310 = 61376
100 = 29184	210 = 52256	320 = 41120
110 = 23008	220 = 50272	330 = 24672

POOLSWINNER II

THE ULTIMATE POOLS PREDICTION PROGRAM

- **MASSIVE DATABASE** Poolswinner is a sophisticated Pools prediction aid. It comes complete with the largest database available – 22000 matches over 10 years.
- **PREDICTS** Not just SCOREDRAWS, but AWAYS, HOMES and NO SCORES.
- **SUCCESSFUL** SELEC guarantee that Poolswinner performs significantly better than chance.
- **ADAPTABLE** Probabilities are given on every fixture – choose as many selections as you need for your bet. The precise prediction formula can be set by the user – you can develop and test your own unique method.
- **SIMPLE DATA ENTRY** All team names are in the program. Simply type in the reference numbers from the screen. Or use FIXGEN to produce fixture list automatically (see below).
- **LEAGUE AND NON-LEAGUE** All English and Scottish League teams are supported, and also the non-league sides often used on pools coupons.
- **PRINTER SUPPORT** Full hard copy printout of data if you have a printer.

PRICE £18.00 (all inclusive)

NOW AVAILABLE

FIXGEN 88/9 AT LAST: No more struggling for hours to get the fixture list into the computer. FIXGEN has been programmed with all English and Scottish League fixtures for 1988/89. Simply type in the date, and the full fixture list is generated in seconds. Fully compatible with Poolswinner. Yearly updates available.

POOLSWINNER with FIXGEN £19.50 (for both)

COURSEWINNER V3

THE PUNTERS COMPUTER PROGRAM

NOT JUST A TIPSTER PROGRAM, Coursewinner V3 can be used by experts and occasional punters alike. You can develop and test your own unique winning system by adjusting the analysis formula, or use the program in simple mode. Coursewinner V3 uses statistical analysis of major factors including past form, speed ratings, course statistics, prize money, weight, going, trainer and jockey form etc. etc. It outputs most likely winners, good long odds bets, forecasts, tricasts etc. The database includes vital course statistics for all British courses. You can update the database – never goes out of date. *FULL PRINTER SUPPORT.*

PRICE £18.00 (all inclusive) includes Flat AND National Hunt versions.

AVAILABLE FOR

All supplied on tape ... (Automatic Conversion to disc)
AMSTRAD CPCs
BBCs
COMMODORE 64/128
SPECTRUM

DISCS ... (Add £3.00)
AMSTRAD PCW
IBM Format
COMMODORE AMIGA
ATARI ST

Send Cheques/POs for return of post service to ...

selec SOFTWARE

VISA

phone 24 hrs

62 ALTRINCHAM RD, GATLEY, CHEADLE, CHESHIRE SK8 4DP. ☎ 061-428 7425

(Send for full list of our software)

LOOK NO FURTHER

You have found Britain's one and only supplier of high quality learning software

Subjects now available include.....

French, German, Spanish, Italian, Welsh, English, General Knowledge, Arithmetic, Spelling, Geography, History, Science, First Aid, Natural History, Sport, England, Scotland and many others.

Kosmos are specialist producers of Educational Software designed to help you and your children *enjoy learning* from your computer. Our programs even allow you to add your own lesson material.

Write or telephone for.....

a FREE 20-page CATALOGUE of our Educational and Leisure software and details of how to claim your Kosmos T-Shirt.

KOSMOS SOFTWARE

Kosmos Software Limited
FREEPOST (No stamp needed)
DUNSTABLE, Bedfordshire, LU5 6BR
Telephone 05255 3942 or 5406

FOUR GOOD MARKS

PHIL LAWSON examines a selection of goodies from Goldmark

WHEN a company is best known for one type of product it's often difficult for it to branch out in other directions. The name Goldmark Systems probably brings to mind tape-to-disc copiers, but now it has released a few packages which depart from this image.

Character designer and printer buffer

Designing characters for displaying on the screen can be a tricky task for the inexperienced, and redefining the printer's character set a real headache. Assuming your printer has this facility, the manual will probably attempt to describe the process involved in that marvel of modern linguistics, Japlish – an English translation from the Japanese by a Japanese.

Consequently many people ignore the feature. Thankfully, if you have an Epson-compatible printer, Goldmark's designer handles most of the complexities leaving you free to get on with the actual designing.

At the top of the display is a series of 32 blocks allowing 16 screen and printer characters to be redefined and stored. The display shows two grids, one representing a screen character and the other for the printer. This means that it is possible to redefine how a character is printed without altering its on-screen appearance.

The new characters can then be saved to disc or tape, and you can choose between the two at the start of the program. A slight oversight is that you cannot change from disc to tape or vice-versa without re-running the program.

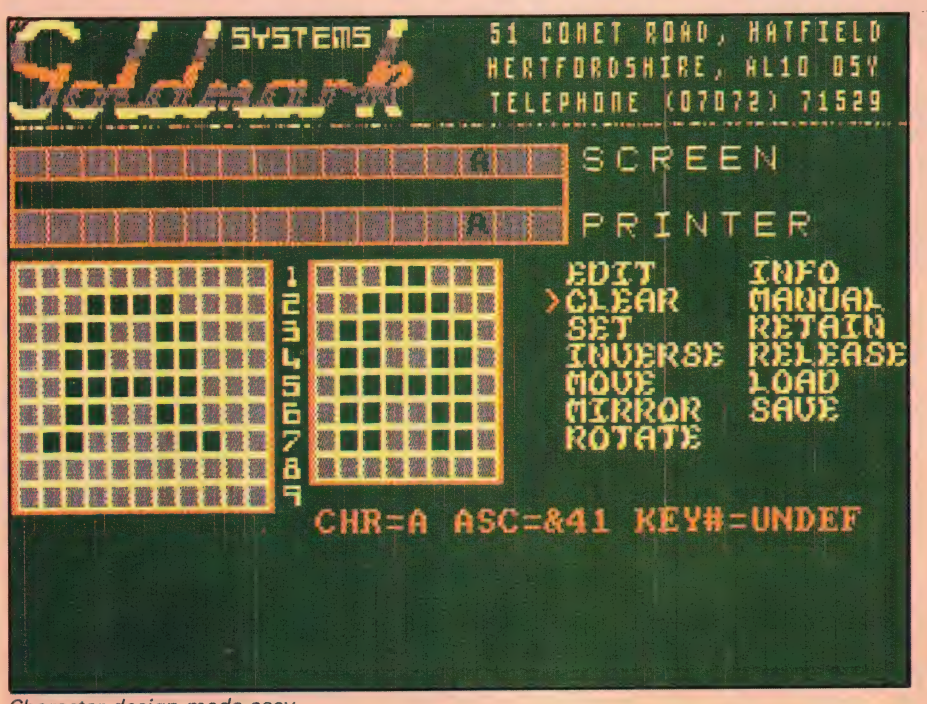
Loading previously-stored character sets allows further editing at a later date, but there's no facility to catalogue the disc. So if you forget the filename you'll have to quit, do a CAT, and run the program again.

The save and load commands are selected from a short menu which has many other options to help with character definition. These include clear, inverse, move, mirror and rotate, all of which adds up to a fairly comprehensive editing package. Finally, to download the new graphics to the printer you run the installation program which uses the saved data.

One problem is that many printers have only 2k or less of ram. This can limit the number of redefined characters, and you may find yourself sitting around waiting for text to print out because of limited buffer size.

The answer is an additional printer buffer, or to enlarge the one fitted. Surprise, surprise, if you have an Amstrad DMP series printer Goldmark also produces an upgrade. It increases the printer's internal buffer to 8k, which will hold nearly four pages of text.

This is quite useful, as you can send this much text to the printer, and while it is busy your CPC is free for use. A short instruction sheet explains how to fit the buffer, which is simply a ram chip, and what changes to make to the printer's circuit board. If you are a novice you may want to get somebody qualified to do it for you.



Character design made easy

Fun in the City

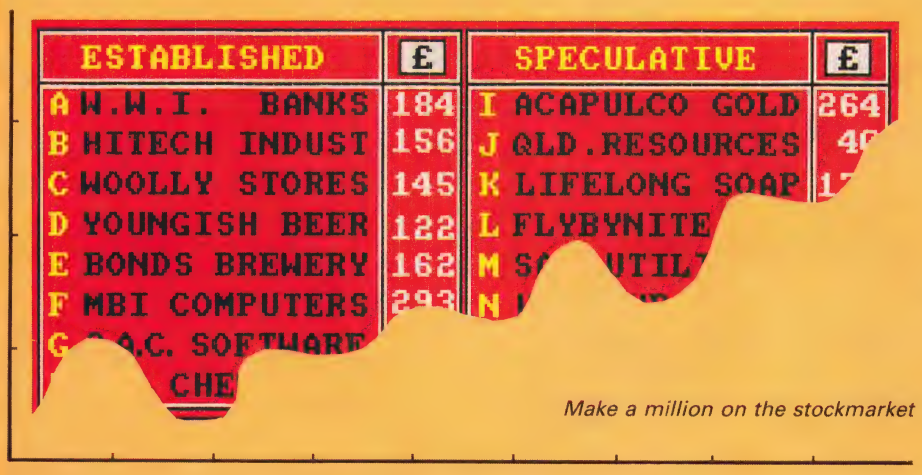
Have you ever wondered what it's like to dabble in the stock market? Many people are attracted by the world of high finance, but don't want to risk losing their life savings. One way to satisfy these urges – and keep the family fortune intact – is to invest in a stocks and shares simulation such as Shareplay.

Starting with £10,000, your aim is to become a millionaire. This will mean keeping a careful eye on market prices and taking notice of the messages that flash across the bottom of the screen.

Sixteen companies and their current share prices are displayed, along with the market index. Deciding where to put your money can be a daunting task, but take my advice and spread it around a bit. If one company should go to the wall, you'll still have some cash left.

Government policies and trade union actions can affect prices dramatically, and terrorist activity near

Turn to Page 30 ▶



Make a million on the stockmarket

◀ *From Page 29*

mines can push the price of gold up to the limit. Certain commodities will always produce a high yield, unless the market should crash.

Buying and selling should be carried out with caution, as sudden and unwarranted decisions may bring your financial practices under close scrutiny. This usually results in your bank account being taxed, not to mention heavy fines that can wipe out a fortune overnight.

Your score is saved automatically when you end a session, but I would have liked a save-game feature. This game is quite addictive, but I think it would do better if its £14.99 price tag was lowered a little. After all, at this level it is competing with quality arcade games and adventures.

Singa alonga CPC

Last, but by no means least, we have Tunesmith. Most CPC games incorporate music, ranging from simple bleeps to a full-blown tune. The problem for most people wanting to write computerised music is that they are not trained in how to string notes together. Being tone deaf doesn't help much either.

Tunesmith converts your keyboard into a simple eight-octave electronic organ. Synth mode adds a touch of futuristic sound for zap-and-blast games, with the organ mode best used for title music.

Playback will let you enter the notes one at a time and listen to the result at full speed. The main drawback is that you can't edit the tune to alter one or two notes. The only method of doing this is to save the music as a Basic program, and change the notes within the resulting data statements.

This facility to save music as a program is very welcome, and even complex tunes are stored in relatively short code. With a little practice, you'll soon be churning out the melodies with the alacrity of Messrs Rice and Lloyd-Webber.

Products: Character Font Designer £11.99 disc, £7.99 tape (CPC464 only); DMP Printer Buffer £12.50; Shareplay £12.00 disc only; Tunesmith £12.00 disc only.
Supplier: Goldmark Systems, 51 Comet Road, Hatfield, Herts AL10 0SY
Tel: 07072 71529.

CPC COMPUTING MAIL ORDER OFFERS

Get into porcine power with PSYCHO PIG UXB

In this dastardly tale of mass porcicide your task is to clear the screen of your fellow pigs.

Scattered around are time bombs. Walk over one to pick it up, press Fire to send it towards another player and, if you get the timing right, he'll be blown to bits. Get it wrong, and you may end up with a burning desire to go flying.

SAVE UP TO £3

Psycho Pig UXB is a game in horribly bad taste, but it's great fun and really addictive. The music's very catchy too.

For just £7.99 (tape) or £11.99 (disc), Psycho Pig UXB is a must for everyone's collection.

Order yours TODAY using the form on Page 53

Compumart

A Great Deal More For a Good Deal Less!

Free FAST DELIVERY

Amsoft 3" CF2 DISKS

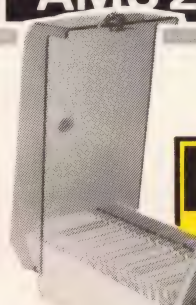
- Genuine Amsoft CF2 3" disks
- Guaranteed Amsoft quality and reliablity
- Supplied in the new protective sleeves
- Buy from the UK's largest supplier

BOX OF FIVE Only £10.39 Ex.VAT

BOX OF TEN Only £19.99 Ex.VAT

DISCOUNTS FOR LARGER QUANTITIES!

AMS 20L DISK STORAGE BOX



The ideal way to file your valuable disks protected from dust, spilt drinks etc.

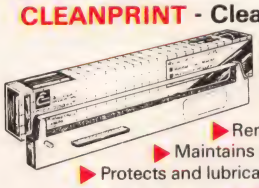
SPECIAL OFFER
FREE AMSOFT 3" CF2 DISK WITH EVERY AMS20L BOX

- Holds 21 cased 3" CF2's or up to 40 uncased.
- Hinged, smoked perspex lockable lid

Only £11.26 Ex.VAT

CLEANING

CLEANPRINT - Cleaning Ribbon



NEW

- Removes ink deposits
- Maintains print quality
- Protects and lubricates the printhead

PCW 8 Series £6.95
PCW 9 Series £6.30

CLEARHEAD

- Safer data storage
- Prolonged disk and drive life
- Easy to use

£7.39

QUALITY PRINTER RIBBONS

Choose either...

Genuine Amstrad printer ribbons or one of our quality compatibles, either way it adds up to GREAT VALUE!!!

	Genuine AMSTRAD		QUALITY COMPATIBLE	
	FABRIC	CARBON	FABRIC	CARBON
PCW 8 SERIES	£4.30	£4.95	£2.95	—
PCW 9 SERIES	—	£3.35	MULTI-STRIKE £2.95	MULTI-STRIKE £2.95
DMP 2/3000	£4.30	—	—	—
DMP 4000	—	—	£4.95	—

All prices are ex-VAT and per ribbon

SUNDRIES

LISTING PAPER 2000Sheets 11"x 9½", 60gsm	£13.00
DUST COVERS PCW 8/9 Series from only	£8.49
SCREEN FILTERS PCW 8/9 Series	£14.95
CPC Mono/Colour	£10.39

24HR ORDER HOTLINE (0509) 610444

Superb Service

- Usually same day despatch on most items
- FREE, next working day delivery on all hardware, allow 2-5 days for other items
- Large stocks for immediate despatch
- FAST, efficient service

Great Guarantees

- If any item proves to have a manufacturing fault within 30 days we will replace free of charge or refund in full
- After 30 days and within the warranty period, we will repair at our expense

Better Back-up

- Friendly advice and after sales support
- Any problems quickly resolved to your complete satisfaction
- Special offers to existing customers We aim to please . . . and usually do!

All prices exclusive of VAT

Prices/delivery subject to availability and only applicable to UK mainland, N. Ireland and BFPO's. E&OE
Compumart are licensed credit brokers. Simply ask for written details.

Compumart
A Great Deal More, For a Good Deal Less

COMPUMART LTD
FREEPOST (ACU)
LOUGHBOROUGH
LEICS LE11 0BR
TEL: 0509 610444
FAX: 0509 610235

Now just C here

IAN SHARPE gives a glimpse of the pro programmers' language

LOOKING back over past issues I noticed that apart from skirmishes with Logo and Forth we've always concentrated on Basic and machine code. This isn't surprising, as the former is free and a good implementation, and the latter is the logical next step if you need more power.

However, these languages aren't the only way of making your CPC do your bidding, and variety being the spice of life and all that, I thought it would be interesting to look at the advantages – and drawbacks – of the C programming language.

I use this on my Amstrad PC because whatever language you program in has to be loaded from disc, so Basic is no more convenient than any other. When you take into account that C is far more powerful than Basic, the choice comes down to cost – you usually get a version of Basic free with a PC – and whether you're prepared to learn another language in return for the flexibility and speed C has to offer.

On your CPC, C is a less obvious option, but it does have things to recommend it:

- If you have any thoughts of becoming a professional programmer in the wider world of commercial computing, a knowledge of Basic is unlikely to impress a prospective employer. Even the tea lady and the office cat can cobble together a few GOTOs and GOSUBs. Many professional programmers use C, and a knowledge of it will give you a head start in the job market.
- C is designed in such a way that it is difficult to write badly structured programs. You can't flit from one end of a program to the other with GOTOs, and you are forced to break the program down into logical sections, as you are supposed to. Once you get into the habit of working this way it'll improve your programming in other languages.
- C programs tend to be easy to adapt for other micros because all C implementations are written round a common core. Versions vary much less than dialects of Basic found on other machines, and learning C on your CPC would enable you to write simple programs on a PC, Atari ST, Amiga, or even a mainframe without having to start from scratch.
- With C it is possible to build up libraries of commonly used program segments. You can use these in any program by simply using their name and telling the C compiler which library to look in. Program development then becomes very rapid when you've collected some useful routines.

Sounds tempting, doesn't it? But it's not all beer and skittles, and it's only fair to list some of the drawbacks:

- A C package will cost you money.
- With one exception CPC versions run under CP/M. This makes graphics and sound difficult unless you know some machine code.
- The one implementation that runs under Amsdos – Hisoft C – is slightly non standard and lacks floating point arithmetic. Also, I don't like the program editor. On the plus side Hisoft C also comes with a CP/M version which works under 2.2 or Plus.
- The only version I've tried on the CPC with floating point is Arnor C. This is CP/M Plus only, and its floating point routines are no faster than Basic's. Also, the system has rather a cumbersome feel, though it is very comprehensive.
- C is more difficult than Basic, and unless you've got experienced help it isn't for the beginner.
- Being a compiled language – more on that later – you can't see instant results in the same way as you can with Basic.

The nature of C

Having seen the pros and cons, let's look at the language itself. The fundamental difference between C and Basic is that C is compiled whereas Basic is interpreted. The Basic inter-

preter in your CPC is a machine code program. When you run a Basic program the interpreter works out what commands each line contains then calls up machine code subroutines to deal with them.

Put another way, the line has been interpreted into something the Z80 microprocessor at the heart of your micro can understand. If a line executes 1000 times during the course of a program, it is interpreted 1000 times. This interpretation process imposes a time overhead which is why Basic is so sluggish.

C takes a totally different approach. You write your program in a text editor or word processor, and save it as a text file. At this stage the file means as much to the CPC as a letter to Grandma. The C compiler takes this and works through converting it into machine code, the end result being a program which has been interpreted once and for all. This is not as efficient – short or fast – as what would be written by a skilled machine code programmer to do the same job, but it is still faster than Basic, and usually quite adequate.

If you leaf through your Basic manual you will see around 170 keywords listed. C has just over 30, and these are mainly concerned with program flow – loops, IF...THEN statements and so on – and setting up variables. There isn't a keyword to print on the screen or one to get a character from the keyboard. These may seem like glaring omissions, but in fact they are the source of C's power.

I said that you can build libraries of useful routines. In C these self-contained blocks of program are known as functions, and with every C compiler comes a library. In it are functions to print to the screen, read the keyboard and all the other things you'd expect. The library functions substitute for Basic keywords, and when you build a library the functions in it are used in programs in the same way as keywords in other languages.

The consequence is that you can end up with libraries containing literally thousands of functions, which makes Basic look like the guy who gets sand kicked in his face. The more fundamental functions like screen printing have the same names and work in the same way in all C compilers, so to that extent programs easily transport from one system to another.

My £30 Zortech C for the PC doesn't have graphics support but has more functions than Locomotive Basic has keywords, and that's just the core of a system which is added to every time I write a program. More expensive compilers are supplied with even more than that.

C in action

Here's a typical C program.

```
/* Trivial C program */

#include <stdio.h>

main()
{
int i;

    printf("I'm going to print\n");
    printf("the numbers 1 to 10\n");

    for(i=1; i<=10; i++)
       printf("%d\n",i);

    printf("Finished!\n);
    message();
}

message()
{
   printf("Hi! I'm the function\n");
   printf("MESSAGE()\n");
}
```

The first line is a comment, just like a Basic REM. A C comment can span several lines, so as well as telling the compiler where it starts with /* we use */ to show the end.

Next the compiler is told to look in the library file *stdio.h* for the definitions of functions it can't find in the program. All C programs are made up of functions, and execution always starts at the one called **main**. The other function defined in this program is called **message**.

The first line in **main** tells the compiler that in this function we are going to use a variable *i*, and it will be an integer – a whole number. **printf** is the standard function to print to the screen, and it is defined in *stdio.h*. The \n at the end of the text is how we tell a C compiler we want a carriage return.

The next bit sets up a loop with *i* given an initial value of one. The loop continues while *i* is less than or equal to 10, and for each cycle of the loop *i* is incremented by one. The use of ++ as in *i++* is the same as *i=i+1* in Basic. Indeed, you can do that in C too, but *i++* is quicker and neater. As a matter of interest, if we had wanted to add

Turn to Page 34 ▶

◀ From Page 33

three to *i*, C accepts *i=i+3*, but *i+=3* does the same job more elegantly.

A loop in C only executes the single statement which follows the FOR line, the end of a statement being shown by a semi-colon. If you want more than one statement in your loop you have to lump them together within curly brackets:

```
for (i=5; i<=11; i+=3)
    {
    printf("Counter=%d\n",i);
    printf("More than one\n");
    printf("statement\n");
    }
```

The *%d* in the string tells **printf** to look for an integer to put in that position. In this case the integer is whatever value is in *i*, and is followed by a carriage return.

After printing *Finished!*, the program comes to the function call *message();*. This is like doing a GOSUB to the block of program defined in curly brackets under *message()*. After it has done its job it hits the closing curly bracket and returns to **main**. Once back, there's nothing more to do in **main**, so the program is complete.

It's important to realise that the only functions which are executed are called up from *main*, or are called from functions called from **main**, and so on. Control does not drop through from the end of **main** to the next function; once it hits that bottom curly bracket the story's over.

If **message** had been something useful, I could have put the definition in a file called, for instance, *mylib.h* and by adding:

```
#include <mylib.h>
```

to the start of the program the compiler would have fished the definition out when required. **message** would then be as much a part of my version of C as **printf**. Powerful stuff, is it not? And that's barely scratched the surface.

Which C?

Although more are available, the two compilers I've tried on the CPC are Hisoft and Arnor.

Hisoft has a lot going for it – it's not too expensive and comes with Amsdos and CP/M versions. The Amsdos libraries include full sound and graphics support. The other side of the disc is OK with CP/M 2.2 and includes functions to access GSX graphics with Plus. The CP/M text editor is WordStar compatible, which means you'll love it or detest it. The Amsdos editor is similar to Basic's, which makes you feel at home but does tend to restrict clear layout.

There are some non-standard features which, with the exception of no floating point, don't pose any real problems. If you can live with integer-only arithmetic, Hisoft C is a very good buy.

Arnor C is a different beast. As a C implementation it is more complete than Hisoft, including floating point arithmetic and trig functions. It is CP/M Plus only, so you're restricted to the CPC6128 and PCW series. There's no GSX support, but if you know a little machine code and don't mind tying your CP/M programs to the CPC you can easily get at the firmware calls to provide graphics functions.

The text editor is Aped, which is excellent. The edit-compile-edit cycle is slower with Arnor C than with Hisoft, but how frustrating that is depends on you.

CPC COMPUTING MAIL ORDER OFFERS

BE A SURE-FIRE HOTSHOT

This is the latest smash from Addictive – a unique game of strategy for one or two players which combines the best elements of Pinball, Breakout and Tennis.

Trap a bouncing missile with your suction gun and send it spinning across the arena to destroy your opponent or smash through barricades.

Hotshot is a fast-action game which will keep you playing for weeks and is sure to become one of the top games of the year. At only £7.99 on tape, or £11.99 on disc, it represents fantastic value for money.

SAVE up to £3!

£7.99 TAPE

£11.99 DISC

TO ORDER PLEASE USE THE FORM ON PAGE 53

So what's new?

TONY KENDLE and DAVE DORN bring you updates on two products reviewed recently

AS you will have seen from the news story in last month's issue, Graduate Software has released version 2.3 of CP/M Plus on rom. This is a development of the original version which I reviewed in the June issue, and has made an already good product superb.

You may now enter CP/M conditionally with the command |OP, which provides you with a list of programs on the disc in the default drive. Pressing the spacebar steps through the files in the directory, and a quick dab at Return runs the program.

Should you have inserted the wrong disc or found that the *.com* or *.sub* file you require isn't there, hitting Escape twice returns you to Basic with everything intact. If you wish to continue with a Basic program which was running when CP/M was called, you just need to hit a key because |OP seems to have the same effect as pressing Escape once.

I find this invaluable, as I often manage to put the wrong disc in the drive. It's not the only useful feature however, as V2.3 also allows accessory roms to be used under CP/M. What this means is that you can have, say, *nsweep.com* blown on to rom and it is available for instant loading. The pre-production accessory rom that Graduate supplied for review came with *nsweep, format, pcw, run, unera*, and *d*.

Nsweep is well known to CP/M users, while the others provide functions that are often useful, but necessitate tedious loading from disc because they are not built-in transients. *pcw.com* is useful if you need to read PCW format discs, *unera* is self explanatory, and *d* gives an extended disc directory similar to *dir.com*, the transient version of DIR.

Format works in exactly the same way as the Utopia bar command of the same name, and again is very useful. No more messing about with long-winded *diskit3*!

Coming back to the two main roms, Graduate has now built in support for the KDS 8 bit printer port, a facility I was, unfortunately, unable to test. As before, any *profile.sub* file on disc in drive A will be acted upon, giving auto-boot capability in a fraction of the time normally associated with CP/M start-ups.

The only minor bug in the review copy concerned Turbo Pascal. V2.3 of the roms is none too happy with this program, as it uses illegal calls. However, Roger Bamkin – Graduate's MD – told me that this has been rectified in the latest roms, so it should present no problems.

If you regularly use CP/M Plus and didn't order these roms when last they were reviewed, you should be ashamed of yourself. If you don't go out and get a pair now, I despair for your powers of perception!

This CP/M user has ordered his, and will be using them every day by the time you read this. I'll also have had some of my favourite files blown on to accessory roms. Might I suggest you do the same? If you did buy version one, an upgrade is well worth the extra £9.90, and will give you a host of new facilities.

Dave Dorn

Product: CP/M Plus on rom V2.3, and CP/M Accessory roms.
Price: CP/M Roms £32.50.
Upgrade from V1, £9.90 plus old roms.
Accessory Roms, £15.00 each rom.
Supplier: Graduate Software, 14 Forrester Avenue, Weston on Trent, Derby.
Tel: 0332 702993

GENERAL Ledger is the third in the series of accounting utilities for small businesses. If you read my review of Small Traders' Pack in the September issue, you will already know that these are excellent value, well suited to small companies and one man operations. They cover all the essential operations for very little outlay.

In common with earlier releases, in some ways the new programs are rough and ready, managing to combine ease of use with ease of misuse. The manual warns that General Ledger will not be perfectly polished because error trapping and foolproofing uses up room, thus reducing valuable data space.

There is a limit as to how far SD could push this argument when you consider how much has been squeezed into Masterfile, for example. However, the quality of programming has improved over earlier products, and I was beeped at for no obvious reason on fewer occasions.

Once or twice the program froze, making me think it had crashed, but this was either the result of garbage collection or internal calculations. The manual does forewarn you of possible delays, but underplays their length and irritation value.

There is a strong argument that anyone who does not know what a ledger program does should not consider buying one, but in brief it records the company's financial incomings and outgoings and works out such things as the profit and loss account and VAT due.

Among the outgoings will be regular expenses such as electricity bills, or capital expenditure such as the purchase of a new computer.

Turn to Page 37 ▶

DISCOUNT SOFTWARE

from M.J.C. SUPPLIES

DISC GAMES:

Arcade Force 4	16.95
ATF	11.95
Blockbusters	11.95
Bubble Bobble	11.95
By Fair Means or Foul	11.95
Captain Blood	11.95
Colossus 4 Chess	11.95
Colossus Mah Jong	11.95
Dark Side	11.95
Dragons Lair II	11.95
Driller	14.95
Empire Strikes Back	11.95
Football Manager II	11.95
F15 Strike Eagle	11.95
Game Over	10.95
Gold, Silver, Bronze	21.95
Gunship	11.95
Hotshot	11.95
Konami Arcade Collection	14.95
Magnificent Seven	14.95
Overlander	10.95
Pirates	16.95
Platoon	11.95
Prohibition	11.95
Road Runner	11.95
Scrabble Deluxe	12.95
Silent Service	11.95
Six Pack III	11.95
Spy v Spy Trilogy	11.95
Streetfighter	12.95
Target Renegade	11.95
Thundercats	11.95
Time & Magik	11.95
Trivial Pursuits	16.95
The Pawn 6128	16.95
Vindicator	11.95
We are the Champions	14.95

THIS MONTHS SPECIALS

LANCELOT
RRP £19.95 Ours £12.95

SUPREME CHALLENGE
Inc. Elite, Starglider, Tetris, Sentinel and Ace II on disc only
RRP £16.95 Ours 11.95

EDUCATIONAL:

Fun School 2-5 years	7.95
Fun School 5-8 years	7.95
Fun School 8-12 years	7.95
World Wise	11.95
Animal Veg. Mineral	11.95
Answer Back Jnr Quiz	11.95
Fact File Spelling	7.95
Fact File Arithmetic	7.95
Fact File Sports	7.95

Note: Factfiles are extra question packs for the Answerback Jnr Quiz

DISC SERIOUS:

Spanish Tutor	16.95
French Mistress	16.95
German Master	16.95
Stop Press	38.95
Maxam ass/diss	19.95
Protext	19.95
Prospell	18.95
Promerge	18.95
Plan-It	15.95
Tasword 6128	19.50
Qualitas Plus	12.95
Taspell	12.95
Tasprint	10.95
Tascopy	10.95
Tasdiary	10.95
Tassign 6128	23.95
Matrix Spreadsheet	29.95
Mastercalc 128	25.95
Masterfile III	29.95
Mini Office II	15.95
Advanced Music System	25.95
Advanced Art Studio	19.95
Arnor Filer	18.95
Arnor Office Suite	26.95

CPM BASED:

Supercalc 2	41.95
Dr Graph	39.95
Dr Draw	39.95
Dr CBasic	35.95
Dr Pascal MT+	35.95
Arnor C Compiler	38.95
Maxam II	38.95
Nevada Fortran	39.95
Nevada Cobol	39.95
Hisoft Devpac 80	39.95
Hisoft Pascal 80	39.95
Hisoft C Compiler	39.95
Iankey 2 Finger Typing	19.95
Iankey Crash Course	19.95

MJC SPECIAL

PROTEXT CPM: including Spellchecker & Mailmerge
RRP £59.95 Ours £39.95

CASSSETTE BASED:

Maxam 464	15.95
Protext 464	15.95
Tasword 464	15.95
German Master 464	14.95
French Mistress 464	14.95
Answer Back Jnr Quiz	8.95
Mini Office II 464	11.95

ACCESSORIES:

Printer Lead 1M	8.95
Printer Lead 1.5M	9.95
Printer Lead 2.0M	10.95
RS232 Leads (various)	11.95
Mono Screen Filter	12.95
Colour Screen Filter	14.95
Comp Pro 5000 Joystick	13.95
Quickshot Turbo Joystick	11.95
Cruiser Joystick	9.95
6128 Light Pen	26.95
464 Monitor Ext Leads	6.95
6128 Mon Ext Leads	7.95
Amstrad V21/23 Modem	95.95
1000 Fanfold Labels	5.95
3" Head Cleaner	6.95
Second Drive Lead	7.95
DKT 64K Memory Exp	44.95
AMS 20L Disc Box	9.95
AMX Mouse + Art	65.95
AMX Mouse + Stop Press	69.95
464 Dust Cover (mon/col)	7.95
6128 Dust Cover	7.95
Amstrad RS232 Interface	55.95

BOOKS/MANUALS:

Adv Amstrad Graphics	7.95
Mastering Machine Code	8.95
The Amstrad CPM+ Book	12.95
128 Firmware Spec (968)	18.95
Programming the Z80	19.95

SPECIALS:

DMP 2000 Ribbons:
..... x 2 7.00
..... x 5 16.00

Genuine Amsoft CF2 Discs
..... x 10 22.95
..... x 20 42.95

ROM BASED:

Protext	29.95
Maxam	29.95
Maxam 1.5	22.95
BCPL	22.95
Utopia	23.95
Prospell	26.95
Promerge+	26.95
Rodos	28.95
Cage Rom (State I/face)	31.95
Rombo Rom Board	31.00
Rombo (bought with any Rom)	28.95

ALL PRICES INCLUDE VAT, POSTAGE & PACKING IN THE U.K.

THE ABOVE SOFTWARE IS ONLY FOR THE AMSTRAD CPC RANGE PCW OWNERS PLEASE WRITE FOR DISCOUNT PRICES

MJC Packages

Qualitas Plus, KDS 8 bit port, Display font pack
RRP £44.45
Package Price £34.95

NEW PRODUCTS:

KDS 8 BIT PRINTER PORT: Gives your printer more flexibility – ideal for use with QUALITAS.
MJC Price: £18.95

KDS RS232 INTERFACE: Inluding comms software built in on Rom.
MJC Price: £45.95

KDS 5.25" DISC DRIVE: For use as a second drive, complete with software & lead. Plug in and go.
MJC Price: £149.95
with Roms S/Ware £169.95

CORNIX SOFTWARE:

Card Index
Easy to use filing system
Cassette £19.95 Disc £24.95

Simple Accounts
Easy to use accounts. Ideal for small business including VAT
Cassette £34.95 Disc £39.95

Job Estimator
Useful tool for contractors
Disc £39.95

Full specifications on the above programs on request

NEW PRINTER RANGE

All include printer lead

MP-135 PRINTER: 80 Column, 135 CPS Friction & Tractor feed, Epson comp
MJC Price: £149.95

DMP 2160 Printer
£159.95

PANASONIC 1081: 80 Column, 120 CPS Friction & Tractor feed, Epson comp
MJC Price: £169.95

Star LC10: 80 column
144 CPS Friction and Tractor Feed, Epson Comp. 4NLQ Fonts
MJC Price: £234.95

MP-200 PRINTER: 80 Column, very fast 240 CPS Friction & Tractor, Epson comp
MJC Price: £279.95

Overseas orders welcome – Please write for details

WE ARE NOW IN OUR FIFTH YEAR OF SPECIALISING IN AMSTRAD MAIL ORDER, OUR POLICY IS TO PROVIDE THE WIDEST RANGE AT DISCOUNT PRICES WITH A FAST TURN AROUND TIME – TRY OUR SERVICES WITH CONFIDENCE

CALLERS WELCOME! MON-FRI 9am TO 5pm SAT 10am TO 4pm

PLEASE SEND CHEQUES/POs TO:

M.J.C. SUPPLIES, (CWA)

40a Queen Street, Hitchin, Herts. SG4 9TS.
Tel: (0462) 32897/420847 for enquiries/Credit Card orders

VISA

Access

◀ *From Page 35*

Incomings could be from sales or services performed, sale of old equipment and so on.

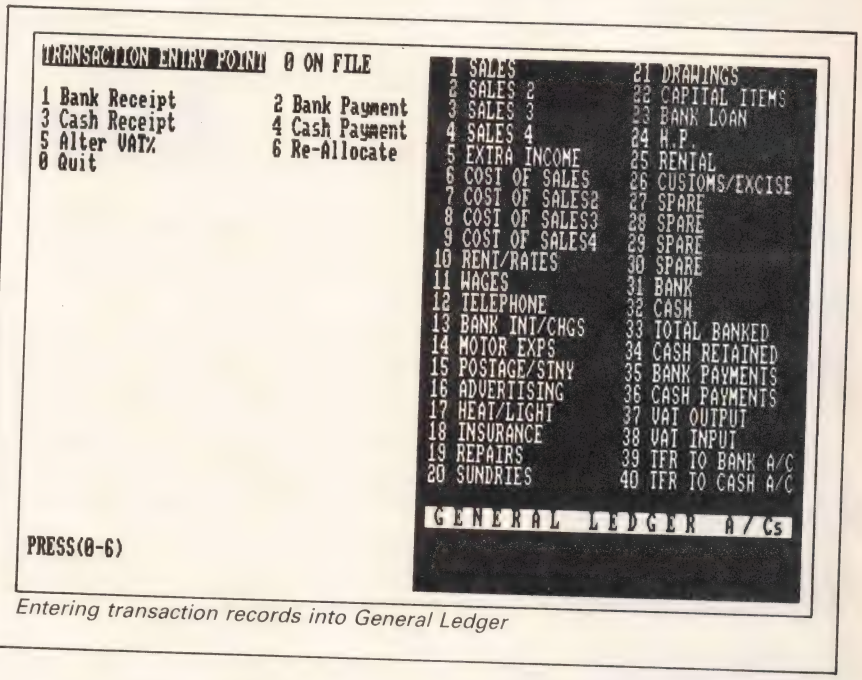
Without diving into the deep waters of accounting, let it just be said that some of these transactions are included in the profit and loss account while others are not. General Ledger has up to 40 preset types of transaction such as bank payment, telephone or wages. Every time money goes in or out it is allocated to a transaction type. Summaries can be obtained for any of these so you can see how much was spent on, for example, stock in a particular month.

This approach means that accounting novices do not have to guess how different financial items should be treated, but it is conceivable that some people may find the preset options limiting. The names of each transaction type can be changed, but not the total number or the way they are treated in the books.

As long as entries are accurately and regularly kept up to date, General Ledger will keep track of your company bank account status and financial performance. There are inevitable limitations to the sophistication of the programming and financial analysis, but overall SD Microsystems has succeeded admirably in making the process of book keeping easy to follow and do.

Tony Kendle

Product: General Ledger.
Price: £19.95 or £14.95 if purchased with Small Traders' Pack.
Supplier: SD Microsystems, PO Box 24, Hitchin, Herts.
Tel: 0462 675106



Entering transaction records into General Ledger

WIN WITH *NEW*
COURSEMASTER
THE COMPUTER HORSERACING PROGRAMME

* RATES ANY RACE IN SECONDS – ANY DAILY NEWSPAPER IS ALL YOU NEED
* NEVER out of date – Both N. Hunt and Flat – Fast data entry
* AMAZING ACCURACY!! – Now you CAN BEAT THE BOOKIE!!
* Works on the simple principle FAST HORSES BEAT SLOW ONES!!!!
* Clearly indentifies best selection in every race plus these AMAZING features:
* First, Second and Third choice shown for forecasts and Tricasts etc. Recommends most suitable type of bet.
* Actually works out your WINNINGS on most popular bets including (SINGLES and DOUBLES, win and each way,) PATENTS, YANKEES, CANADIANS, HEINZ etc. Good EACH WAY and LONG ODDS bets clearly shown.
* Will PRINT out your BETTING SLIP for you
* Maintains a BANK ACCOUNT – BETS like PROFESSIONALS do! Records all your bets in any number of accounts. Keep a complete record of your betting or compare COURSEMASTER against your favourite tipster.
* PLUS!! – THE AMAZING COURSEMASTER SYSTEM (This superb betting system is included in the programme. A system which regularly produces huge wins from small stakes.) Try it! Can pay for itself many times over on the first day!
* Supplied with 20 page BETTING GUIDE and MANUAL

FREE HOT TIP OF THE MONTH TO EVERY PURCHASER

All for £14.95 inc post and packing. Disc users please add £2.00 for disc
Available now for all Spectrums (inc +3 disc version), Commodore 64/128 Sinclair QL, (add £1.00 for mdrive), Amstrad CPC, All PCW's BBC and Electron. Also now available IBM-PC £18.95. Please state which.

£ PROFIT FROM YOUR MICRO – YOUR OWN SMALL BUSINESS USING YOUR MICRO

- WHATEVER your MICRO is you can use it to make a good income! Even if you only have a couple of hours spare each week!
- We have put together a package of easy, sensible and practical business ideas which can easily be used by anyone with any micro. No computer expertise required!!
- Earn ££'s from home doing what you enjoy doing – using your COMPUTER! It doesn't matter which model.
- You probably already have all you need to start earning.
- THOUSANDS of potential customers in your area who will GLADLY pay for your services. We will show you how to find them!

Full step by step guide to EARNING MONEY FROM YOUR MICRO.
FREE BUSINESS IDEAS CASSETTE TAPE WITH EVERY COPY £12.95 inc p&p

SPECIAL OFFER: Buy both of the above – discount £2.
INTRASET LTD. (Dept CPC) Freepost, (No Stamp Needed) 6 Gilderdale Close, Gorse Covert, Birchwood, Warrington, Cheshire, WA3 2BR.
(Large SAE for further details)

Skill.....Tactics.....Strategy.....Decisions.....Excitement.....Tension.....Action

FOOTBALL & CRICKET

QUALITY STRATEGY GAMES from E & J SOFTWARE (Established 1984)

EUROPEAN CHAMPIONS ★ NEW ★ - THE INTERNATIONAL CHALLENGE OF THE EUROPEAN NATIONS CUP - Genuine Nations Cup Format with full Random Draw of 32 Seeded Teams - Fixture List, Results and League Tables of ALL 8 Groups - Discipline & Medical Reports - Squad of 22 Players plus Other Players available - 17 Month Itinerary of Qualifying Group (Arrange Friendlies) and Finals - Plus **many** more Superb Features and Options. EUROPEAN CHAMPIONS includes E & J's *MATCH PLAY SYSTEM* an imaginative and exciting new style of match presentation which captures the ACTION, DRAMA & TENSION of International Football.

WORLD CHAMPIONS - A COMPLETE WORLD CUP SIMULATION - Select Friendlies - 25 Players - Qualifying Group - 2 In-Match Subs - Discipline Table - Select Tour Opponents - Extra Time - Final Rounds - Players Gain Experience - 7 Skill Levels - TEXT MATCH SIMULATION including:- Bookings, Goal Times, Named & Recorded Goal Scorers, Injury Time, Corners, Free Kicks, Match Clock, Penalties - PLUS many more Features.

PREMIER II - CAN YOU HANDLE ALL OF THIS? - Play all Teams Home & Away - Unique Transfer Market - Team & Substitute Selection - Named & Recorded Goal Scorers - Injuries - Transfer Demands - Continuing Seasons - Squad Listing ALL Teams Financial Problems - 7 Skill Levels - Offers to Manage other Teams - Sackings - Managers's Salary - Save Game - Team Styles - Bank Loans - AND many more Features.

EUROPEAN II - THE MOST COMPLETE SIMULATION OF EUROPEAN CLUB FOOTBALL YOU CAN BUY - Home & Away legs - Full Penalty Shoot-Out (with SUDDEN DEATH) - 2 In-Match Subs - Away Goals count Double (if Drawn) - Full Team & Sub Selection - Extra Time - 7 Skill Levels - Enter your own PREMIER II Winning Team - TEXT MATCH SIMULATION plus Sending Off and Disallowed Goals - Results Table - PLUS MUCH MORE!

CRICKET MASTER - A SUPERB SIMULATION OF ONE DAY INTERNATIONAL/COUNTY CRICKET - Weather, Wicket & Outfield Conditions - Batting & Bowling Tactics - Team Selection - Fast, Medium & Spin Bowlers - 4 Types of Batsmen - Select Field Layout - 3 Skill Levels - Wides - Byes - No Ball - Run Out - Misfield - Dropped Catches - Scoreboard - Batting & Bowling Analysis - Run Rate - Single Option - 3 Game Speeds - STAR FEATURE a complete MATCH OVERVIEW showing Ball by Ball Action and Commentary and MUCH MORE!

TEST MASTER ★ NEW ★ A COMPREHENSIVE SIMULATION OF A 5 DAY TEST MATCH -Includes most of the Features of CRICKET MASTER and MATCH OVERVIEW plus Declarations - Nightwatchmen - Light Meter - Rain Stops Play - Varying Number of Overs per Day - Follow On - Save Game - New Ball - Bad Light Interruptions - TEST MASTER is a True representation of a Complete Test Match and offers the ULTIMATE CHALLENGE to All Cricket Enthusiasts.

CRICKET MASTER & TEST MASTER prices Include a FREE pad of SCORESHEETS

Software availability	Spectrum Any 48/128K		Commodore 64/128K		Amstrad CPC	
	Tape	Disc + 3	Tape	5¼" Disc	Tape	3" Disc
EUROPEAN CHAMPIONS	£7.95	£11.95	n/a	n/a	n/a	n/a
WORLD CHAMPIONS	£6.95	£10.95	£7.95	£10.45	£7.95	£11.95
PREMIER II	£6.95	£10.95	£7.95	£10.45	£7.95	£11.95
EUROPEAN II	£6.95	£10.95	£7.95	£10.45	£7.85	£11.95
CRICKET MASTER	£7.95	£11.95	£8.95	£11.45	£8.95	£12.95
TEST MASTER	**£8.95**	**£12.95**	**n/a**	**n/a**	**£9.95**	**£13.95**

FANTASTIC VALUE: Special Discount of £2.00 for every EXTRA game purchased (e.g. buy 2 Games deduct £2.00 from TOTAL - buy 3 Games deduct £4.00 from TOTAL - 4 Games £6.00 etc).
ALL GAMES are available by MAIL ORDER for *IMMEDIATE* despatch by 1st class post and include Full Instructions. (OUTSIDE UK please add £1.00 for postage and send payment in Pounds Sterling only).
PLEASE STATE WHICH MACHINE AND TAPE OR DISC.
Cheques or Postal Orders payable to E & J Software.

Send to: E & J SOFTWARE, Room A3, 37 Westmoor Road, ENFIELD, Middlesex EN3 7LE. Tel: 01-443 1936

CPC COMPUTING

Christmas Family Pack offer

SAVE OVER £16

Here's a great idea for Christmas! We are offering both Mini Office II and ALL the Fun School I tapes or discs at a substantially reduced price. For just £19.95 on tape, or £29.95 on disc, this is an offer you should not miss!

TAPE	RRP £32.80
OFFER PRICE	**£19.95**

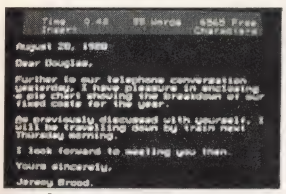
DISC	RRP £46.80
OFFER PRICE	**£29.95**

Mini Office II

Mini Office II is the highly-acclaimed, award-winning suite of integrated programs which will turn your computer into a versatile business machine.

Look at some of the tasks you can perform with the six separate modules:

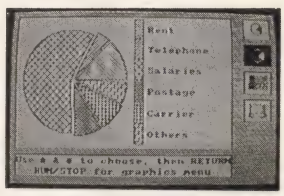
BBC version



Word processor

Compose a letter with the WORD PROCESSOR. Set the printout options using embedded commands or menus and use the mail merge facility to produce personalised circulars.

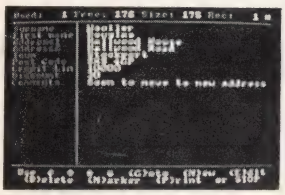
With the GRAPHICS module you can produce pie charts, overlay line graphs and display bar charts side by side or stacked. Enter data directly or load from the spreadsheet.



C64 version

Graphics

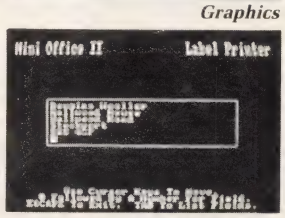
C64 version



Database

Build a versatile card index with the DATABASE. Use the flexible printout routine, do powerful multi-field sorts, use all arithmetic functions and link with the word processor.

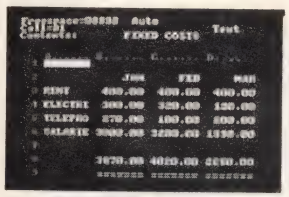
Design the layout of a label with the easy-to-use LABEL PRINTER. Select label size and sheet format, read in database files and print out in any quantity.



Amstrad version

Label printer

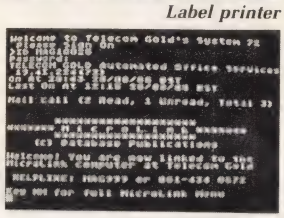
Amstrad version



Spreadsheet

Prepare budgets and tables with the SPREADSHEET module. Total columns and rows with ease, copy formulae absolutely or relatively, and recalculate automatically.

Use a modem with the COMMS module to access services such as MicroLink and order a wide range of goods, and send instant electronic mail, fax, telex and telemessages.



Atari version

Communications

FUN SCHOOL!

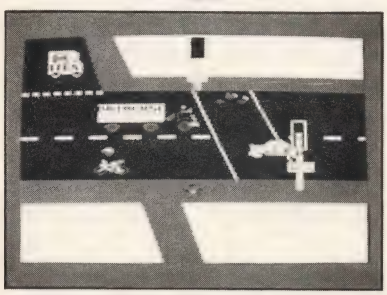
- **Use your Amstrad CPC to teach and amuse your children at the same time**
- **Three packages crammed full of educational programs – and so easy to use!**
- **Each program has been educationally approved after extensive testing in the classroom**

Learning can be fun

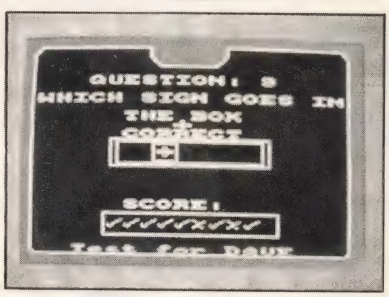
Ages 2-5	
Alphabet	**Magic Garden**
Colours	**Matchmaker**
Counting	**Pelican**
House	**Seaside**
Numbers	**Snap**

Ages 5-8	
Balance	**Fred's Words**
Castle	**Maths Test**
Derrick	**Number Signs**
Hilo	**Seawall**
Mouser	**Super Spell**

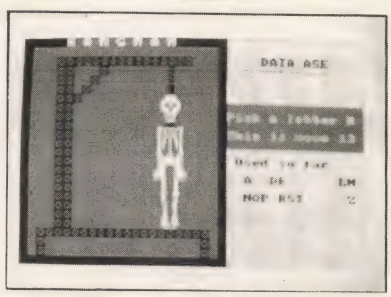
Ages 8-12	
Nim	**Odd Man Out**
Guessing	**Pelmanism**
Hangman	**Towers of Hanoi**
Maths Hike	**Codebreaker**
Anagram	**Dog Duck Corn**



PELICAN
Teach your children to cross the road safely at a Pelican crossing



NUMBER SIGNS
Provide the correct arithmetic sign and aim to score 10 out of 10



HANGMAN
Improve your child's spelling with this fun version of the popular game

TO ORDER YOUR PACK, PLEASE TURN TO THE FORM ON PAGE 53

The hassle with those home-brews

Gandalf on the world of adventures

A LETTER from Stephen Keeling has raised some interesting points about the problems facing authors of home-brew software. Stephen has sent an adventure to several software houses only to have it rejected on the grounds that it is text only, or the company concerned simply doesn't want adventures.

The trend these days seems to be towards graphic adventures which, to my mind, is a shame. I don't think you can beat evocative text, and quite often pictures are used to disguise weak gameplay.

In your search for a company to publish your game, Stephen, I suggest you do a bit of market research and find out which software houses regularly publish adventures, particularly text-only ones. Having said that, it would have been nice if the companies Stephen contacted had given their opinion of his game rather than an essay on the state of the market.

Stephen also asks what I expect from an adventure submitted to me for review. When I review material by an established software house I expect a professional package. That is an adventure which is bug-free, without spelling mistakes, with clear documentation, and worth its price.

I expect less in most areas from a game submitted by a reader – but more in one. Most home brewers are lovers of the genre, and I expect this to show. I accept the odd bug on the understanding it will be cured before the game is offered for sale.

Spelling mistakes, as any writer will tell you, can sometimes be missed however many times you check your work, so I tend not to allow these to cloud my judgement – provided there aren't too many. That said, if you're preparing the text with a word processor there is no reason why it shouldn't be run through a spelling checker before being incorporated in the program.

I expect the documentation to be clear and understandable, but it matters little whether it is printed, a text file on disc or tape – though make sure it is saved as an Ascii file – or even hand-written.

The game should load easily, so a disc version is preferred, and usually serves to reinforce the writer's sincerity. Finally, the one thing that always helps but is rarely enclosed – a map and solution.

I hope that helps anyone thinking of producing an adventure. And yes, I would very much like to see the game you have written Stephen. If it's up to scratch, we'll review it.

On to a few of your problems. An adventure that seems to elicit regular requests for help is **Seabase Delta**. Paul Old has managed to get into the travel car but is unable to start it. *Insert the card from the dead body after wearing the belt.*

The excellent Interceptor game **Jewels of Babylon** has Marc Jacobs reaching for pen and paper. *Give the watch to the cannibals and kill the octopus with the spear.*

Thanks to the timely arrival of a solution from Chris Muff, I can answer D. Hares' request for help in opening the sluicegate in **Aftershock**. *Fill the bottle with oil from the wrecked tanker, fit the handle to the mechanism, lubricate it, then open the sluicegate.*

Paul Whittingham would like to know how to make the bomb in **Nova**. I have a solution to this adventure, but Paul hasn't given enough information for me to help him.

My thanks to Darren Farlow for his very flattering letter, to Inigo Dunkley for his solution to Spellbound, Danny Batroyd for his to Dracula parts I and II, and to Chris Muff for Aftershock.

Turn to Page 40 ►

HALL OF FAME

An end to Necris Dome – and farewell Frankenstein

Necris Dome – A complete solution by Darren Stephens

Travel East and examine the corpses. Get the ice then move West. Search (to reveal an open hatch above you), go up, North then drop the aerosol. Move West, (you now teleport) then West again. Drop the green, take and examine the shell then wear it.

Get and examine the helm. Go East twice, South twice, East then North. Examine the vat – it contains gallons of deadly fluid. Fill the helm and travel East. You see another mandroid. Throw the acid – the mandroid screams and clutches its face. Search the mandroid then look. It is burning and you can see red and pink trans-rods. Take them, then move South, West (you teleport again), North, East then South.

Examine the lockers – 20 of them, with differently coloured doors. Open the white one and look inside to find and get the white trans-rod. Travel North then West – you teleport. Throw the ice to neutralise the barrier to the West. Head West and you now see the dreaded arch-mandroid. Examine him. He appears to gather his energy through a silver pipe which connects him to vast banks of machinery.

Shoot the pipe with the At-Lan gun (to disable him), search him (to find a key), get and examine the key. It is golden with a flame symbol on it. Go West, and search the centre. This is the power centre for the whole dome, and is dominated by a large reactor which is controlled by a security key. Insert the key, shoot the generator with the At-Lan gun. It is now de-activated and an explosion is imminent. Move East, drop the white trans-rod, North, East then West seven times. Get the oxy then move West twice and go into the casket. Game completed.

Final message:
"Well done! The dome is ripped by a huge explosion but you are safely jettisoned into space. The exchanger gives you adequate oxygen and the homing device is functioning. Your mission has been a total success".

Additional note
There are energiser pads at some locations in the dome which will eventually drain all your energy. To disable them, get the circuit diagram and insert it to access a panel. Then push the four buttons to switch off the pads.

Frankenstein – Part III of a solution by Graham Wheeler

Type in *Prometheus* (the name you saw on the diary and the end of Part II). Dr. Frankenstein reads the monster's story and you become the monster. You arise in a dark room knowing nothing.

Look around, and think. You realise the man fears you because you are different. Examine the bench, get and examine the book. You can't understand it but feel that it is important. Examine the sink then the water. You like the feel of it. Drink then look into the water. You see a monster – you open your mouth, the monster opens its mouth, and you then realise the monster is you. Move North and listen to the couple. They say the word love. Watch them, and you see them press their lips together and look happy.

Travel West. Something hits your shoulder – it comes from a man with a black tube. Run East – you wander until you reach and enter a cave. Move East three times then South. Your arm hurts.

HALL OF FAME

Examine it – the wound is festering. Move East and North, bathe the arm (it does not help), search the shore, get the salt and rub it on the arm. You black out but when you come round the wound has nearly healed.

You see a woman in difficulties and save her. As she comes round you press your lips to hers to show affection, but she is frightened of you. You accidently kill her as you try to calm her. You go to the cliff. Move West twice then North. Look around, examine the bushes, and take and smell the strange fruit. It smells bitter and acid. Get and smell the peculiar fruit. It smells sweet and pleasant. **Note**: Either of the fruits can be poison depending on their smell.

Eat the peculiar fruit – you are not satisfied – travel East then North. You strike off into the forest and learn from the creatures what is safe to eat. Go East and you see dwellings to the North and South. When you try to go towards them you are prevented by their resemblance to the place where you were hurt. Go West twice then North (you see a dwelling), listen (you hear raised voices), East, look around. Through the bushes you see the door of the cabin.

Wait. Men come out of the cabin carrying guns – they are looking for you. Move North, look around (you see a shed), examine the shed (the door is closed), open the door carefully (you don't make a noise). Enter West then look around. You see gaps in the timber.

H-E-L-P

CAN anyone tell Danny Batroyd how to get the Clingons out of the minefield in ***Smashed***? *Since this game is new to me, some general information about it would be helpful.*

A game that is puzzling two adventurers is ***The Colour of Magic****. Inigo Dunkley would like to know what to do with the biscuits and bottle and G.A. Goss would like general help. Someone else that needs broad help is Patricia Naylor who has written in about* ***Arkham Manor****.*

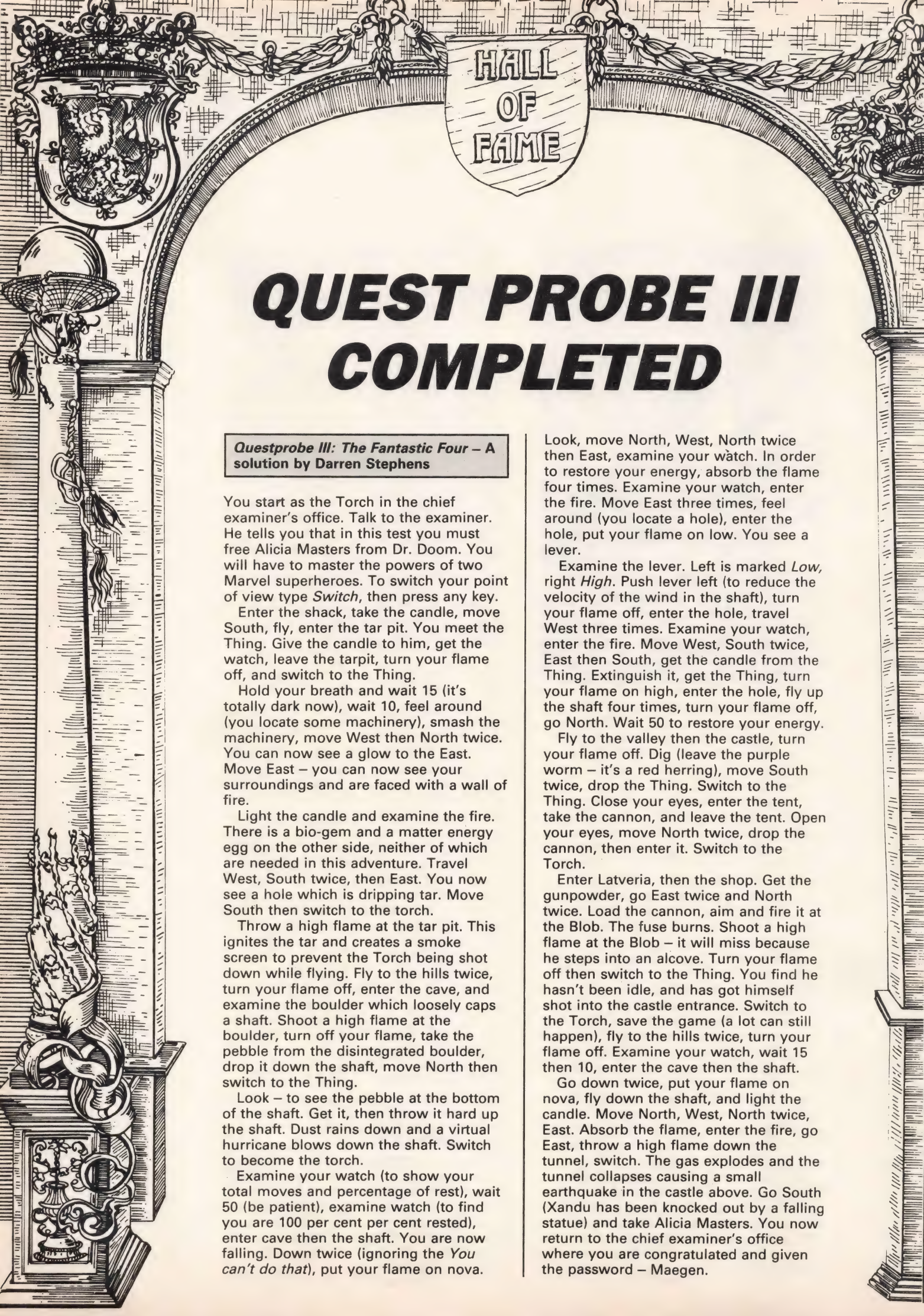
Paul Whittingham is stuck in a game that I haven't had the opportunity to play, ***The Sydney Affair****. Paul has two statements and the ballistic and autopsy reports, but cannot progress any further. Can anyone help him out?*

Examine the gap and you see into the cabin – a blind man and a couple are there. The young man is showing the woman how to make and understand marks on paper.

You rest. Examine the gap and you see the couple are leaving. Examine the gap again – the blind man is alone. Open the door carefully and go East, South, West then North. You enter the cabin. Look around, and you see the blind man who is friendly and believes your story about the killing. He warns you to hide again as the couple are returning, so you return to the shed. Examine the gap. The young man continues to teach the woman. Examine the gap again – the cabin is now dark – and you hear the sound of a lion outside the door.

Break the strange fruit and slide a segment under the door. The lion eats it and is poisoned. The hunters approach. Wait until they come and collect the lion, and leave. You are told that you then spend several months in the shed, avoiding capture, learning from the young man's tuition of the woman, and visiting the blind man when they are out.

Read the book – at last you can read the truth about your creation. You are horrified and decide to tell your story to the blind man. Open the door carefully, move East, South West then North. While you are with the blind man, the young man returns and attacks you with an axe. You take it from him and, in a blind rage, kill him with it. The game ends, Dr. Frankenstein finishes your story and is filled with sadness.



QUEST PROBE III COMPLETED

***Questprobe III: The Fantastic Four* – A solution by Darren Stephens**

You start as the Torch in the chief examiner's office. Talk to the examiner. He tells you that in this test you must free Alicia Masters from Dr. Doom. You will have to master the powers of two Marvel superheroes. To switch your point of view type *Switch*, then press any key.

Enter the shack, take the candle, move South, fly, enter the tar pit. You meet the Thing. Give the candle to him, get the watch, leave the tarpit, turn your flame off, and switch to the Thing.

Hold your breath and wait 15 (it's totally dark now), wait 10, feel around (you locate some machinery), smash the machinery, move West then North twice. You can now see a glow to the East. Move East – you can now see your surroundings and are faced with a wall of fire.

Light the candle and examine the fire. There is a bio-gem and a matter energy egg on the other side, neither of which are needed in this adventure. Travel West, South twice, then East. You now see a hole which is dripping tar. Move South then switch to the torch.

Throw a high flame at the tar pit. This ignites the tar and creates a smoke screen to prevent the Torch being shot down while flying. Fly to the hills twice, turn your flame off, enter the cave, and examine the boulder which loosely caps a shaft. Shoot a high flame at the boulder, turn off your flame, take the pebble from the disintegrated boulder, drop it down the shaft, move North then switch to the Thing.

Look – to see the pebble at the bottom of the shaft. Get it, then throw it hard up the shaft. Dust rains down and a virtual hurricane blows down the shaft. Switch to become the torch.

Examine your watch (to show your total moves and percentage of rest), wait 50 (be patient), examine watch (to find you are 100 per cent per cent rested), enter cave then the shaft. You are now falling. Down twice (ignoring the *You can't do that*), put your flame on nova. Look, move North, West, North twice then East, examine your watch. In order to restore your energy, absorb the flame four times. Examine your watch, enter the fire. Move East three times, feel around (you locate a hole), enter the hole, put your flame on low. You see a lever.

Examine the lever. Left is marked *Low*, right *High*. Push lever left (to reduce the velocity of the wind in the shaft), turn your flame off, enter the hole, travel West three times. Examine your watch, enter the fire. Move West, South twice, East then South, get the candle from the Thing. Extinguish it, get the Thing, turn your flame on high, enter the hole, fly up the shaft four times, turn your flame off, go North. Wait 50 to restore your energy.

Fly to the valley then the castle, turn your flame off. Dig (leave the purple worm – it's a red herring), move South twice, drop the Thing. Switch to the Thing. Close your eyes, enter the tent, take the cannon, and leave the tent. Open your eyes, move North twice, drop the cannon, then enter it. Switch to the Torch.

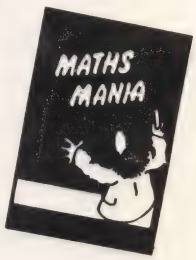
Enter Latveria, then the shop. Get the gunpowder, go East twice and North twice. Load the cannon, aim and fire it at the Blob. The fuse burns. Shoot a high flame at the Blob – it will miss because he steps into an alcove. Turn your flame off then switch to the Thing. You find he hasn't been idle, and has got himself shot into the castle entrance. Switch to the Torch, save the game (a lot can still happen), fly to the hills twice, turn your flame off. Examine your watch, wait 15 then 10, enter the cave then the shaft.

Go down twice, put your flame on nova, fly down the shaft, and light the candle. Move North, West, North twice, East. Absorb the flame, enter the fire, go East, throw a high flame down the tunnel, switch. The gas explodes and the tunnel collapses causing a small earthquake in the castle above. Go South (Xandu has been knocked out by a falling statue) and take Alicia Masters. You now return to the chief examiner's office where you are congratulated and given the password – Maegen.

SCHOOL SOFTWARE LTD.

ORDER DIRECT TO: School Software Ltd., Tait Business Centre, Dominic St., Limerick, Ireland.

FREE Catalogue Amstrad CPC, PCW, PC1512, Commodore, BBC, IBM PC, MSDOS.
Additional Dealers Wanted.
24 Hr. Visa/Access Hotline.
Ring UK 010353-6149477 (Office Hours) (Irl. 061-45399).
Direct UK 010353-6145399 (24 hr.)
ORDER NOW - See Below.

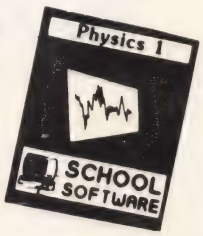


MAXI-MATHS (age 9-15). Amstrad PC, IBM PC, Amstrad CPC. 1. Triangles. 2. Angles. 3. Sin Cos Tan. 4. Rectangles. 5. Circles.
provides a very stimulating learning environment.

MAGIC MATHS (age 4-8). CBM 64, IBM PC, Amstrad CPC, PCW, PC.
Addition and Subtraction. "A serious challenger to similar BBC programs and a good example of its type". PTM (UK).

MATHS MANIA (age 8-12). CBM 64/IBM PC/Amstrad CPC, PCW, PC.
Multiplication and Division. "It appeals to the age group. My son has been sneaking downstairs before breakfast to play". BBC CEEFAX.

BETTER SPELLING (age 8-adult). All Amstrads/ CBM 64/BBC/IBM PC.
"Well Organised Lessons". "A proper course which approaches spelling problems with specific exercises". E & T (U.K.).



BETTER MATHS (age 12-16). All Amstrads/CBM 64/ IBM PC.
Rated in the top five in an eduational survey.

CHEMISTRY (age 12-16). CBM 64/BBC/IBM PC/All Amstrads CPC, PCW, PC.
"Very ambitious in terms of the range of topics. High standard of questions."

BIOLOGY (age 12-16). All Amstrads/CBM 64/BBC/IBM PC.
"A good excuse to play with your computer and have fun while revising". Your Computer.

MAPWORK QUIZ (9-Adult). Amstrad CPC, CBM 64, BBC.
Excellent graphics and sound in this program covering most aspects of the Geography of Britain and Ireland. Great fun for all the family.

PHYSICS (age 12-16). CBM 64, Amstrad CPC, PCW & PC 1512, IBM.
"A colourful way of revising for GCSE/O-Level examination", Your Computer.

PLAYSCHOOL MATHS (age 3-7). Amstrad CPC.
Six of the best programs for the pre-school and young children.

GEOGRAPHY (age 13-17). Amstrad CPC & CBM 64.
Comprehensive coverage of aspects of geography

THE ADVENTURES OF THE THREE BEARS (age 5-10)
"Without doubt, one of the best introductory games I have seen."–CWA CPC.

VISA

ORDER DIRECT TO: School Software Ltd., Tait Business Centre, Dominic St., Limerick, Ireland. Tel. (UK) 010353-6145399.

CPC Discs £16.95
Cass £10.95 (£1.00 p.p.)

Telecom Gold: 72:MAG 32425
Fax Orders (010-353)-61-44315

☐ Access/Mastercard/Eurocard/Barclaycard/Visa Expiry date

Card No. | | | | | | | | | | | | | | | | |

☐ Cheque/PO made payable to School Software Ltd.

My Machine..... Titles .....

Name _____

Address _____

_____

Code _____

The land of Shades

by someone who has been there and survived

I AM Whirlwind: I have been sent to tell you of Shades, a wide land wherin lies great treasure – and great danger too, if you wander around with your eyes closed and no thought of any worth in your head.

To start you must know how to enter the land. When you first play, you will have neither rank, honour nor any points. You will be a Novice and utterly useless. Therefore speak sweetly to others, and do not puff up with boasting, and maybe they will help you.

But if they will not, you had better know how to get around and get treasure. You can move in many ways by typing GO NORTH, GO UP, GO SOUTHWEST and all other directions. But you can also enter N, U and SW, which is quicker. OUT works from nearly everywhere and is good for retracing your steps if you get lost.

At first you will wish to stop and gawp at the wondrous things, and truly the descriptions of locations in Shades are lengthy and full of interesting information and clues.

But if you type BRIEF you will see only the name of your current location – you can see a full description by typing LOOK instead. This is useful, for you will move around quicker, and not have to cope with lots of words on your screen when you have to run fast from evil fighters such as Minotaur, whose name is a byword for cutting people into small bits.

When you find an object you must pick it up: So type GET (object). Not all objects are valuable: If you type GET T (for treasure) that is a quick way to tell if the object is worth anything. Then when you have it, type VALUE (object) to find its worth. Take it to the Mad King's Room, where if you drop it you will be given points for your deed, and may presently advance in rank and power.

The Mad King's Room is to the east of the courtyard in the castle, so you will not miss it. But if the drawbridge is raised you may not enter. Therefore go south from the drawbridge and you will find a way of lowering it.

That is all I can tell you for now, but I will return in the cycle of a moon and speak on matters of glory and honour: How to make a name for yourself in battle, unlike the fool Murrough, who sitteth in a safe place always and never dares risk his unlovely skin.

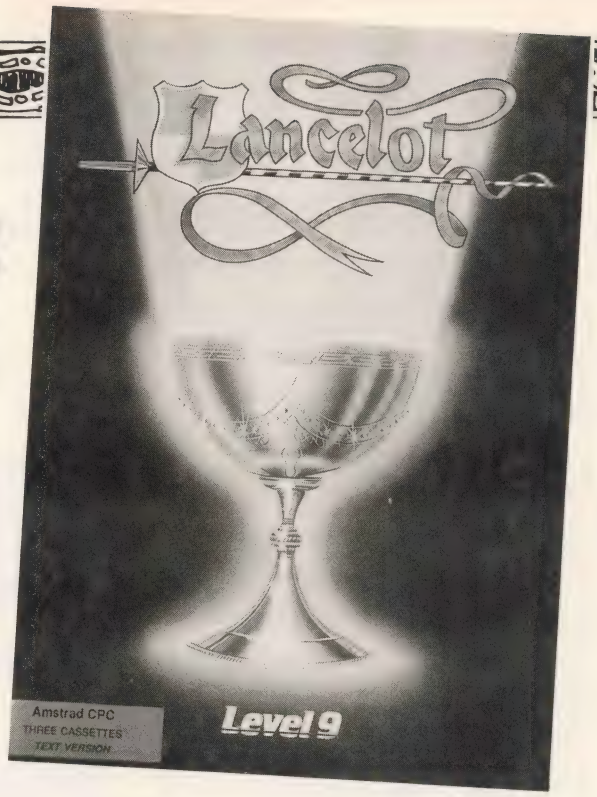
Until then, may the goddess protect you.

How to access Shades using your micro, a modem and a telephone line:

MicroLink/Telecom Gold..... key >Shades
Micronet/Prestel .....key * Shades #

The opening location in Shades

Join the quest with Lancelot



Lancelot
Level 9/Mandarin Software
£14.95 tape (No pictures)
£19.95 disc (CPC6128 or 664/464 with ram pack)

IT beats me how Level 9 manages to keep coming up with not only good games, but original ones. This three-part graphical adventure follows the plot of Mallory's Morte D'Arthur fairly closely, from Lancelot's first appearance at Camelot to the quest for the Holy Grail.

Your task is to play Lancelot and, ultimately, find the Grail. You begin on a road near Camelot and are soon jousting with a mysterious knight who turns out to be King Arthur himself. At the end of the fight he asks you to join him at his castle the next day.

Journeying on to Camelot you should ignore Sir Kay and seek Merlin, your mentor. He will provide shelter for the night, and an examination of his library will prove rewarding.

The next day sees you finding Arthur and learning of the task you need to complete to earn the title of Best Knight. It also brings your first fateful meeting with Queen Guinevere.

You now have to explore the surrounding countryside. Despite the availability of commands such as *Go to*, *Find* and *Run to*, I found it helped to make a map.

It won't be long before you meet the Damosel Maledisant. She will enable you to perform your first chivalrous deed and, in so doing, also meet your first serious challenge. Defeating Sir Phelot is less a case of battling it out than using what is available to you.

The Lady Lyonesse now has a more serious problem for you to solve, and it is necessary to seek her out once more. The path to her door is fraught with danger, but if you act in a manner befitting a knight of the Round Table you will win through. On reaching the lady you will find the solution is close at hand.

You now have a retainer in the Red Knight, and a companion – the Damosel Maledisant. The former will be useful in completing those tasks which you are unable to tackle unaided, and the lady has her own purpose to fulfil.

She can safely be ignored except when she offers advice, which you would do well to listen to. Several of the problems you encounter require you to have control of three retainers, so your mission now is to free another knight.

The briers that you have doubtless seen on your travels can now be overcome with a concerted effort, though at first your only reward seems to be imprisonment, and guile the only means of escape.

Morgan is not impressed with your efforts but the maid is an obvious target and, once you have her on your side, you are in a position to free Sir Gawain to become your second retainer. You are now equipped to find and release all the knights being held captive around the countryside.

Aside from the problems already mentioned, you will have to defeat a giant, steal a harp, kill someone invisible, persuade the invading Sessiones to retreat from Tintagel, defeat a magical knight, find King Pellam of the marshes, and release nine knights from Sir Turquin's dungeons. The latter problem is one that caused me no end of difficulty.

With a score of about 580 out of 1000 you can now go forward to the final part of the game.

I am very impressed with Lancelot. When I try to analyse why, I find it is not because of the complexity of the puzzles – some are easy, others push lateral thinking to the limits – nor is it because of the quantity of the problems.

No, it has to be the evocative text. Lancelot positively reeks of atmosphere, and it has that elusive quality which makes you return time and time again until you complete it.

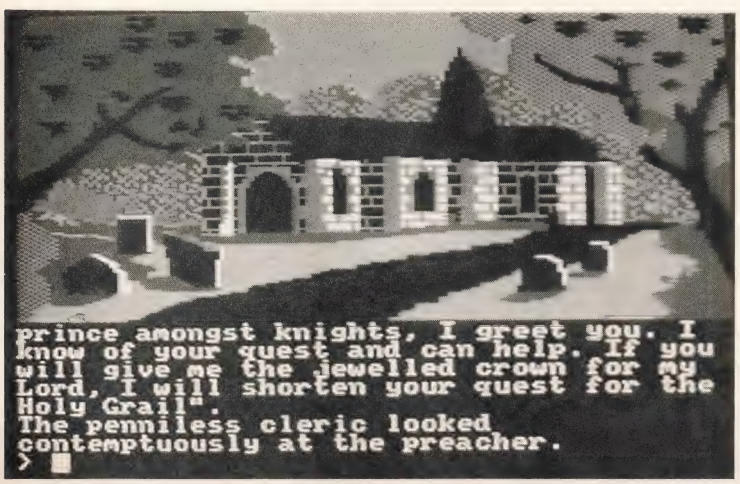
Level 9 has incorporated many of the features we have come to expect from them. The commands mentioned above aside, Ram Save, Restore and Undo are the most useful, though cassette users lack these facilities and have to avail themselves of a rescue service provided by Merlin.

The graphics, too, are much better than in previous games, and although I did eventually turn them off, I was impressed with their quality.

The protection system has also been made easier in that you are now only prompted to enter a word from the accompanying booklet when you try to reload a saved game. This is a satisfying compromise, and works well.

If all of this were not enough, there's a competition where you can take part in a real life quest for a valuable replica of the Grail. Overall, an amazingly well crafted game, and one that I have no hesitation in recommending.

Gandalf



Lancelot positively reeks of atmosphere

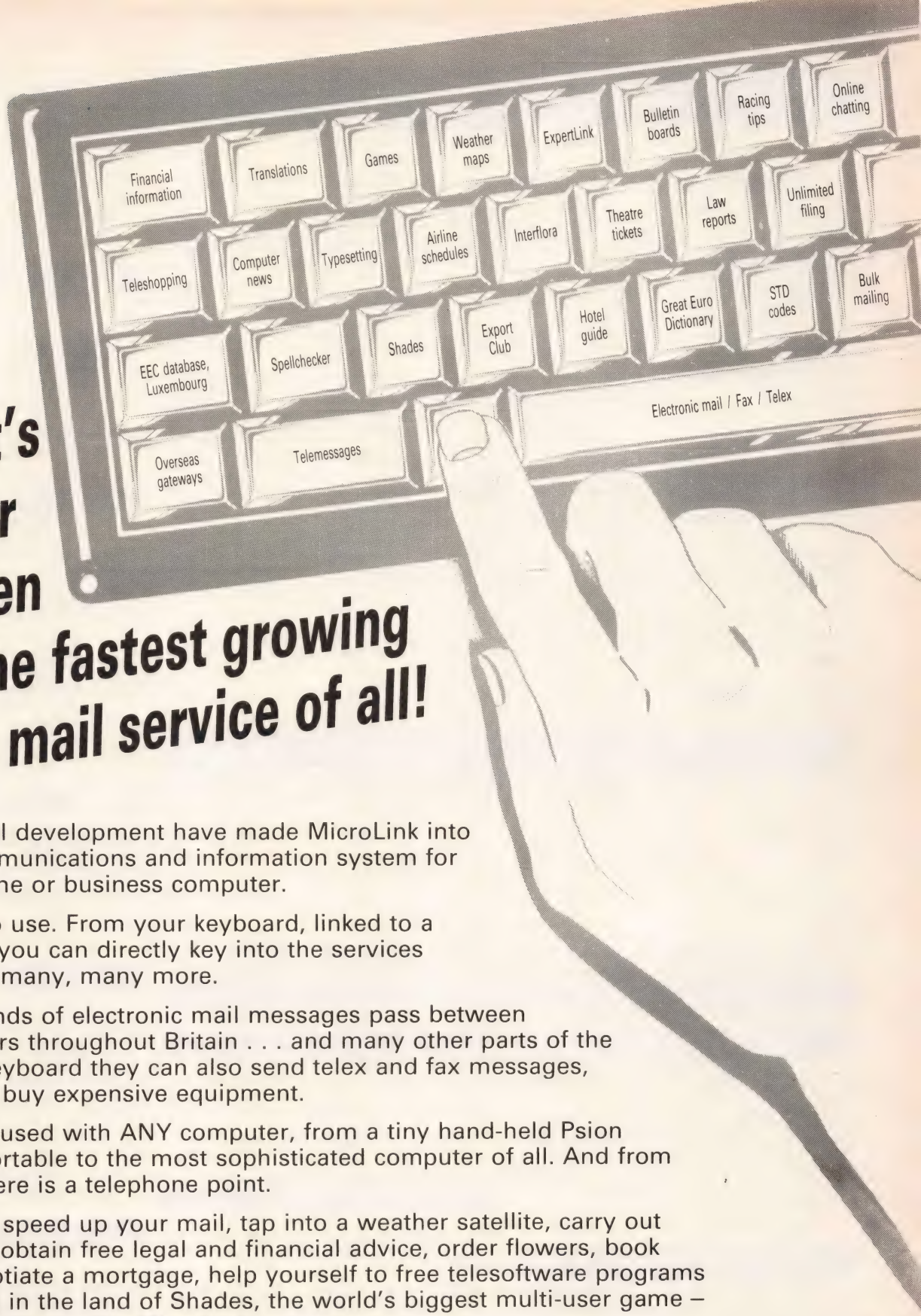
Presentation 97%
Well up to Level 9's usual high standard.

Atmosphere 100%
It's the nearest I'll ever get to the real thing!

Frustration factor 97%
The puzzles are extremely well balanced, the easier ones giving a fine introduction to the harder problems to come.

Value 96%
I'm not renowned for recommending packages in this price range, but this is one game that is well worth the money.

OVERALL 98%
A masterpiece!



Look what's waiting for you ... when you join the fastest growing electronic mail service of all!

Four years' continual development have made MicroLink into the COMPLETE communications and information system for everyone with a home or business computer.

And it's so easy to use. From your keyboard, linked to a modem and phone, you can directly key into the services shown above – and many, many more.

Every day thousands of electronic mail messages pass between MicroLink subscribers throughout Britain . . . and many other parts of the world. From their keyboard they can also send telex and fax messages, without the need to buy expensive equipment.

MicroLink can be used with ANY computer, from a tiny hand-held Psion Organiser or Z88 portable to the most sophisticated computer of all. And from anywhere where there is a telephone point.

So if you want to speed up your mail, tap into a weather satellite, carry out company searches, obtain free legal and financial advice, order flowers, book theatre tickets, negotiate a mortgage, help yourself to free telesoftware programs – or go adventuring in the land of Shades, the world's biggest multi-user game – then there's only one answer – MicroLink.

FIND OUT MORE ABOUT MicroLink

Please send me more facts about MicroLink

Name _____

Address _____

_____

_____

Send to: *MicroLink, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.* CPC12

One number to dial . . .
one security password . . .
one simple log-on . . .
and you're only a keystroke away from the best information and entertainment services now available!

!! NOW SPEEDTRANS PLUS HAS EVEN MORE TO OFFER !!
SPEEDTRANS PLUS2

For CPC 6128 (or 464/664 with DK Tronics 64K (or larger) Memory)
Once the program has been transferred to disc IT WILL RUN ON ANY PC.

SPEEDTRANS PLUS2 now handles the VERY LATEST Speedlock types automatically. No need to hold a key down at anytime during loading. SPEEDTRANS PLUS2 also saves 99% of opening screens and saves them in their full colours.

FULLY AUTOMATIC – JUST ONE KEYPRESS * ONLY ONE PROGRAM TO RUN WHICH FINDS THE SPEEDLOCK TYPE AUTOMATICALLY * WILL TRANSFER ORIGINAL AND MANY OF TODAYS SPEEDLOCK PROGRAMS * NO FIDDLING OR MEDDLING – WRITTEN WITH THE AMATEUR IN MIND * AUTOMATIC DISC FILENAMES * NO WASTED DISC SPACE – SAVES THE CORRECT AMOUNT OF GAME CODE * SAVES 99% OF OPENING SCREENS * SCREENS SAVED IN THEIR CORRECT COLOURS * COMPRESSES SCREEN CODE TO SAVE EVEN MORE DISC SPACE * FASTER LOADING TIMES FROM DISC BECAUSE OF SHORTER FILE LENGTHS

SPEEDTRANS PLUS2 transfers over 200 programs to Disc, some ot the latest it will do are MADBALLS, FREDDY HARDEST (both games) BASKET MASTER, MATCHDAY II, PHANTOM CLUB, GRYZOR (main program), SUPER HANG ON.

These latest Speedlock types can be identified by the whole screen flashing with horizontal bands of colour immediately after the first file has loaded. Do remember that **SPEEDTRANS PLUS2** does not save all the memory in the hope of having saved all the game. It saves exactly the right length of code. All screens are saved in compressed form – some as little as 4K (Basket Master) – thus saving even more disc space.

SPEEDTRANS PLUS2 is the most sophisticated Tape-to-Disc transfer utility for SPEEDLOCK protected programs ever published. It will certainly transfer more games than any other Speedlock transfer program on the market and with much greater ease. Other transfer programs require you to know how long the game code is so that you may run an alternative program for the long games which does not save the loading screen. This is done because they do not make use of the extra memory available on the CPC 6128 or from the use of an extra RAMPACK (DK Tronics 64K or greater.) This program is highly intelligent in that it first reads the loader from the tape and establishes which type of protection is in use from 6 alternatives. At the end of the load it then finds out how long the code is and if it is too long to be saved to one file it will move the excess code into the banked memory and save the game in two parts and write the appropriate loader program. The screen will also be moved into a bank and compressed before saving. This can mean screen files ans small as 4K (Basket Master) depending on mode and content. All this adds up to a lot less disc space being used than with other transfer programs and you will nearly always get the loading screen saved. The exception to this is when there is no loading screen (as in SCRABBLE) or when the screen is blanked out and more code is loaded into the screen memory, as in BMX SIMULATOR and MADBALLS for example. Try getting a screen with Multiface or any other imager. These imagers are only capable of saving what you have in memory at the time the button is pressed. What happens in multi part games? you have to press the button for each part thus wasting precious disc space. They also save far too much code and therefore waste even more space and saving too much code means longer loading times from disc. Programmers are now checking to see if you have an imager plugged in and if you have the program will not load. Imagers also have to be in place before you can reload your program and saved programs can only be reloaded in to the machine in which they are saved. **SPEEDTRANS PLUS2** creates totally stand-alone files and if you have another CPC even without extra memory they will run perfectly. It also displays the saving name on screen at the start of the load will all except the very latest games. In all cases the disc saving name is displayed while the save is carried out. To run the transferred game just RUN this name. Another intelligent feature of **SPEEDTRANS2** is that every first thing it does is to find out which drive it is in. This means that if you have a two drive system you may run the program from drive B by typing RUN"B:DISC" or B:RUN"DISC. However the saving will ALWAYS be to DRIVE A so with a single drive you must change the disc when prompted on screen

DISC:- UK £14.99 – EUROPE £16.25 – REST OF WORLD £17.00
Upgrade your SPEEDTRANS PLUS – send your disc together with: **UK £2.00 – EUROPE £3.25 – REST OF WORLD £4.00**
Upgrade your SPEEDTRANS TAPE send your tape together with: **UK £12.00 – EUROPE £13.25 – REST OF WORLD £14.00**

* LOW LOW PRICES * ARNOR SOFTWARE * LOW LOW PRICES *

Program	UK – Disc	Eprom	Europe – Disc	Eprom	Rest of World – Disc	Eprom
Protext Office *NEW*	29.50	N/A	30.75	N/A	31.50	N/A
Protext Filer *NEW*	19.50	N/A	20.75	N/A	21.50	N/A
Protext	21.50	34.50	22.75	35.75	23.50	36.50
Prospell	19.50	29.50	20.75	30.75	21.50	31.50
Promerge (Rom=Promerge Plus)	19.50	29.50	20.75	30.75	21.50	31.50
Maxam *The Best!*	21.50	34.50	22.75	35.75	23.50	36.50
Maxam 1 1/2 *NEW*	N/A	24.50	N/A	25.75	N/A	26.50
Utopia	N/A	24.50	N/A	25.75	N/A	26.50

PURCHASE THE ROMBO ROMBOARD AND WE WILL GIVE YOU A FURTHER £3.50 DISCOUNT ON EACH ROM PROGRAM

ROMBO ROMBOARD
UK – £31.00 EUROPE – £33.00 REST OF THE WORLD – £35.00

DMP 2000/2160/3000/3160

The printer buffer presently in the DMP 2000/3000 series is a 2K RAM. Most of this RAM is used by the printer's operating system leaving on average 1/2K as buffer space. Our upgrade kit contains a new static RAM chip which will increase the printer buffer by 6K (about 4 pages of text). This upgrade allows all Download Characters to be re-defined allowing the user to design special characters for use with scientific and other programs. The kit is supplied with full pictorial instructions to allow the amateur to carry out his own modification (the DMP2160 takes about 7 minutes). If you dont think you are up to it your local TV shop can do the job in approximately 15 minutes

UK £12.50 – EUROPE £13.75 R.of W. £14.50

FIRETRANS

This utility will transfer a number of FIREBIRD programs from tape to disc automatically including most opening screens in full colour. FIRETRANS will work equally well from tape but will be more convienient to use if converted to disc with SAMSON/ Transmat. It will transfer WILLOW PATTERN, RUNESTONE, CHIMERA, GUNSTAR, PARABOLA, REALM, SPIKY HAROLD, BOOTY, DONT PANIC, GUNFRIGHT, STARGLIDER, NINJA MASTER, HELICOPTER, and some versions of THRUST, HARVEY HEADBANGER and BOMBSCARE.

TAPE:- UK £5.00 – EUROPE £6.25 R.of W. £7.00
DISC:- UK £8.50 – EUROPE £9.75 – R.of W. £10.50

NEW COMPACTOR NEW

COMPACTOR will allow you to load a standard 17K screen, set the mode, border and ink colours and then save it as a compressed screen containing its own mode and ink colour information. Most screens compact down to an average of 9K which is an enormous saving on disc space. Loading time of compressed screens is also proportionately reduced

TAPE:- UK £5.00 – EUROPE £6.25 R.of W. £7.00
DISC:- UK £8.50 – EUROPE £9.75 – R. of W. £10.50

TRANSIT

TRANSIT is a disc-to-disc file copier which handles files upto 40K in length in one pass. It will copy from drives A-A, A-B, B-B and B-A making an ideal utility for use with 5 1/4" second drive

TAPE:- UK £4.50 – EUROPE £5.25 – R. of W. £6.50
DISC :- UK £8.00 – EUROPE £9.25 – R.of W. £10.00

UTILITY DISC No. 1

This utility disc contains 5 programs, all menu driven. They are **SAMSON, TRANSIT, QCLONE, VIEWTEXT** and the fast disc **FORMATTER.**

DISC:- UK £15.50 – EUROPE £16.75 – R. of W. £17.50
ROM :- UK £17.25 – EUROPE £18.50 – R.of W. £19.25

ADVANCED MUSIC SYSTEM

When you buy Rainbirds Advanced Music System from us, we will give you

ABSOLUTELY FREE OF CHARGE

A disc containing THE GOLDMARK COLLECTION of Virtuoso Demonstration Music Files by Rob Baxter, some of which have been written especially for us.

UK £26.00 – EUROPE £27.25 – R of W £28.00

NEW NIRVANA NEW

Have you tried backing up your original expensive disc software and failed? Use NIRVANA before its too late! NIRVANA (meaning enlightenment) is an extremely powerful disc handling utility which has the following features: Disc to disc back-up copier which will handle most of the commercially protected discs available today. File copier for individual files. Disc formatter, much easier to use than CPM. Change file attributes. Erase files. Change filenames. Will handle all disc drive combinations.

DISC:- UK £14.99 – EUROPE £16.25 – R. of W. £17.00

NEW SHAREPLAY NEW

THE STOCK MARKET SIMULATION
(ALL CPC's)

This is a serious educational program for 1 to 6 players and provides all the enjoyment of playing the stockmarket without any risk of personal bankruptcy!! Each player can buy and sell shares and the target is the first to reach £1,000,000. The program includes a stockholding portfolio listing the shares purchased, their number, cost and market value. Bank balances are also shown. Graphical representation of market fluctuations are given in the form of a bar graph. Also included is a high score table. Scores are automatically saved at the end of each session.

DISC:- UK £12.00 – EUROPE £13.25 – R. of W. £14.00

NEW WORDSEEK NEW

THE WORDSEARCH PROGRAM
(ALL CPC's)

This educational progam will tax even the most agile mind. The aim is to find the hidden words in a 15 by 15 puzzle within a set time limit of 30 seconds. The time limit is extended for every correct letter of the current word found. You may create your own puzzle consisting of up to 10 words which can be saved to disc and used at any time. You may only retain one puzzle at a time but if you choose not to use your own puzzle then the program will randomly select one from the library of 50 on the disc. All of the puzzles in the library are made up of 10 words each consisting of 1x8 letter, 1x7 letter 2x6 letter, 3x5 letter, 2x4 letter and 1x3 letter words. This ensures equal difficulty regardless of which one is randomly loaded. The program contains a print option (for Epson compatible printers) allowing a hard copy to be made of any puzzle created. Keyboard/Joystick options are also available.

DISC ONLY:- UK £12.00 – EUROPE £13.25
REST OF THE WORLD £14.00

NEW TUNESMITH NEW

TUNESMITH is a simple to use sound utility which allows you to use the keyboard to play and record your tunes. No knowledge of music or Amstrad sound commands is required all you need to be able to do is whistle the tune you play or record. The octave and period of notes is variable and the program includes synthesiser and vibrato effects. **TUNESMITH** will save any tune as a basic file which can be RUN, CHAINED or MERGED into your own program

DISC :- UK £12.00 – EUROPE £13.25 R.of W. £14.00

SAMSON

SAMSON has been developed by us to transfer not only the normal programs but also many of todays where the code is much longer. **SAMSON** differs in many ways from other Tape-to-Disc utilities, the main differences being: * SAMSON retains original file suffixes (SAMSON. SCN will be saved as SAMSON . SCN) * Improved file relocation method * Elaborate Tape-read/Disc-write system which reduces Tape Motor, Slave Relay and Disc Drive Motor wear substantially. * A large reduction in tape transfer time is also achieved in all but a few cases * NEW "SPLIT" option for todays longer games (we will be using this option in future routines) * All file information is displayed on screen and can be echoed to your printer if needed. SAMSON also transfers itself to disc.

TAPE:- UK £7.50 – EUROPE £8.75 – R. of W. £9.50
DISC :- UK £11.50– EUROPE £12.75 R.of W. £13.50

CHARACTER DESIGNER

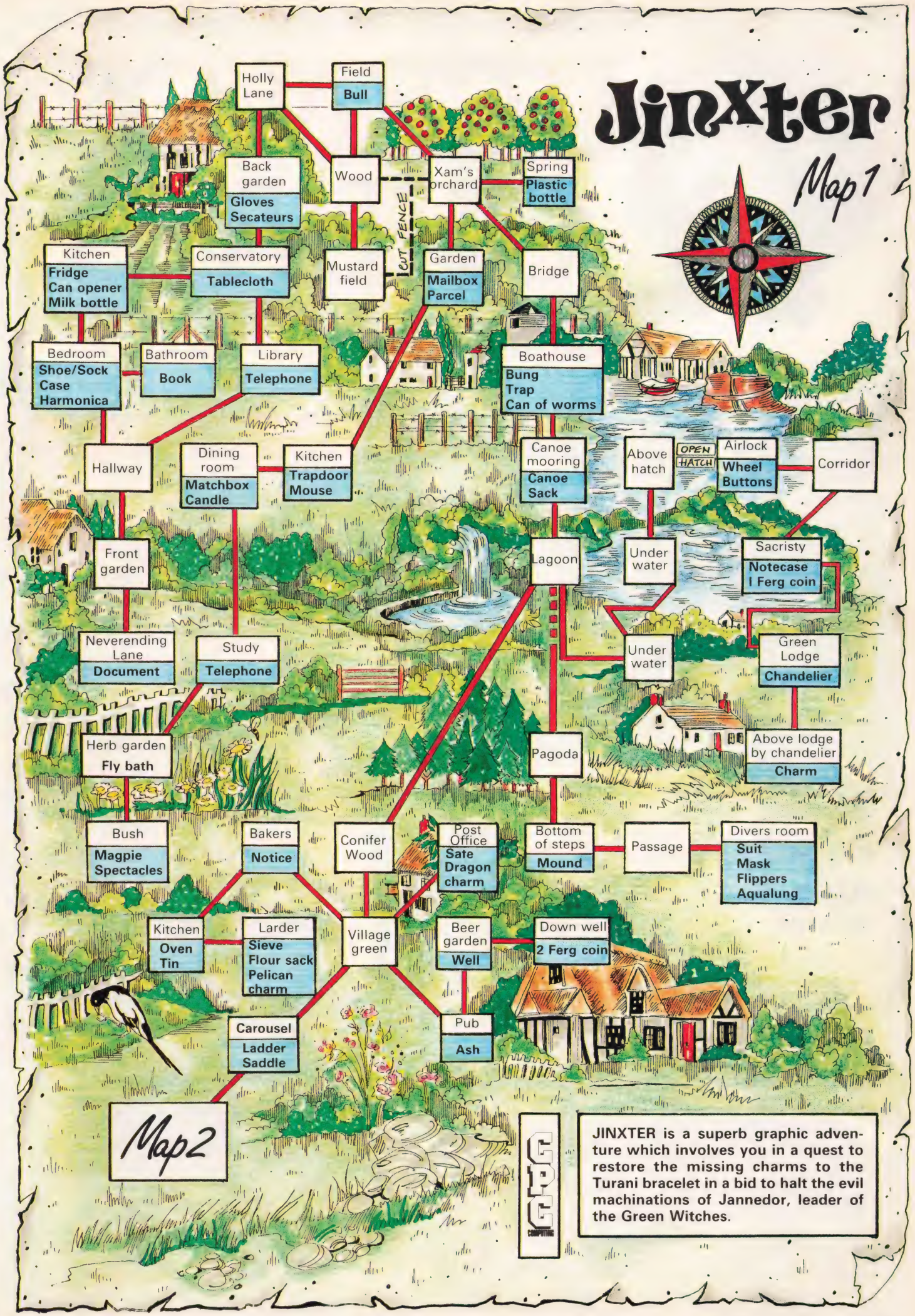
(ALL CPC's)

*** REDEFINE YOUR PRINTER DOWNLOAD CHARACTERS**
*** REDEFINE THE COMPUTER SCREEN FONT**
*** REDEFINE ANY/ALL KEYBOARD KEYS (ASWERTY)**
*** DESIGN SPECIAL SCIENTIFIC CHARACTERS/FONTS**

Takes all the hard work out of character designing making it a pleasure. The printer part of the program will only work if your printer is capable of DOWNLOADING and is EPSON compatible – see your printer manual. Works with 7-bit or 8-bit output (8-bit port). All the designing is done "On-Screen" so you can see exactly what you are doing. You can save your newly designed characters to disc and reload them at any time into a basic program and into most Word-Processors. The program also allows the user to redefine any or all of the keys on the keyboard. This feature will be useful for those who require an ASWERTY keyboard. The disc also contains twelve sample fonts for experimentation.

TAPE:- UK £7.99 – EUROPE £9.25 – R. of W. £10.00
DISC :- UK £11.99 – EUROPE £13.25 R.of W. £14.00

Please send your cheque (£ Sterling) Eurocheque OR UK P.O. to
GOLDMARK SYSTEMS, 51 COMET ROAD, HATFIELD, HERTFORDSHIRE, AL10 0SY. ENGLAND
Please write or telephone 07072 71529 for full brochure



JINXTER is a superb graphic adventure which involves you in a quest to restore the missing charms to the Turani bracelet in a bid to halt the evil machinations of Jannedor, leader of the Green Witches.

UEEN OF CHEATS

Metal Army
(Players)

From Stephen Troup of Kings Lynn come some tips and the complete solution to Metal Army. To keep it short I've shown right as R, up as U, down as D and left as L. He sent a map as well, but I haven't got room for it and I think the solution should be enough.

R, R, up to highest level, down lift on the right, R, R, down lift to first level, L, get pass, R, down to bottom level, L, down hole, move lift to first level, jump across, L, get pass, R, jump back on to lift, move to second level, jump across, L.

Get pass, R, jump back on to lift, U, R, U, L, L, U, L, D, L, down shaft, move lift up, U, L, L, up lift, get pass, down lift, R, R, U, U, left on to next lift, U, L, L, L, L, L, L, get pass, D, D, D, R, up on lift, L, get pass, R, U, U, U, down shaft next to you, D, D, D, and touch the switch. Game completed.

Take a tip or two

- Try to use the gun as little as possible.
- Don't use passes unnecessarily.
- Get as close as possible to the electrical dischargers and coolant gas exhausts. This will allow you to get past them faster.
- Where possible use the lifts to destroy mechanoids.
- To get through the room that requires two passes to get through, you must jump left holding down Fire.
- To get into The End room, get on to the lift on the right and move as far up as possible. Fall off it, go down the shaft, open all the pass doors and fall down the hole before touching the switch.

Skate Board Kidz
(Silverbird)

I had a go on a skateboard once and ended up in stitches, and I don't mean I was laughing. You can pick infinite or 255 lives – remove the line of data above the comment for the one you don't want – and Escape becomes quit. Darren Keegan of Gateshead is the man wot did it.

```
10 ' SkateBoard Kidz
11 '**** Loader ****
12 DATA F3,11,00,0D,31,FF
13 DATA BF,21,AF,BE,06,06
14 DATA CD,77,BC,EB,E5,CD
15 DATA 83,BC,CD,7A,BC,2A
16 DATA 38,BD,22,80,BE,2A
17 DATA 01,BB,22,38,BD,3E
18 DATA C3,21,B5,BE,32,0E
19 DATA BC,22,0F,BC,C9,53
20 DATA 4B,41,54,45,31,2A
21 DATA 80,BE,22,38,BD,CD
22 DATA 37,BD
23 '**** CHEATS ****
24 DATA 3E,FF,32,3F,20
25 ' 255 LIVES
26 DATA AF,32,70,20
27 ' INFINITE LIVES
28 DATA 3E,C3,21,78,20,32
29 DATA 00,00,22,01,00,3E
30 DATA CF,32,F8,19,32,F8
31 DATA 2A,C3,05,20,4A,*
32 FOR i=&BE80 TO &BEBD
33 READ a$:a=VAL("&"+a$)
34 POKE i,a:b=b+a:NEXT
35 IF b<>7205 THEN 46
36 READ a$
37 IF a$="*" THEN 40
38 POKE i,VAL("&"+a$)
39 i=i+1:GOTO 36
40 MODE 1:BORDER 0
41 WINDOW #1,1,30,1,3
42 WINDOW #2,1,30,3,3
43 ENV 1,1,15,1
44 ENV 2,1,13,1,2,1,1,1,0
,2,6,-1,1,1,-9,1
45 CALL &BE80
46 PRINT"Data Error"
```

Crystal Castles

(US Gold)

Richard Palmer of Wrexham gives you infinite lives and a keyboard option for the tape version of US Gold's coin-op conversion. The keys are Z and X for left and right,] and \ for up and down, and Return/Enter for fire. Of course if you want to keep playing with the joystick you can do.

```
10 ' Crystal Castles
11 ' By Richard Palmer
12 ' (c) CwtA/CPC
13 DATA F3,DD,21,00,BF,11
14 DATA 59,00,CD,67,BB,21
15 DATA 2A,BE,22,57,BF,C3
16 DATA 00,BF,21,FF,AB,11
17 DATA 40,00,C3,AF,39,3E
18 DATA 45,32,4B,00,3E,99
19 DATA 32,4E,00,F3,F1,C9
20 DATA AF,67,6C,22,7B,92
21 DATA 22,7D,92,22,7F,92
22 DATA C3,00,80
23 MODE 1:CALL &BBFF
24 PRINT"Do you wish to ";
25 PRINT"use keyboard. ";
26 INPUT k$
27 k$=UPPER$(k$)
28 FOR i=&BE00 TO &BE38
29 READ a$:a=VAL("&"+a$)
30 POKE i,a:b=b+a:NEXT
31 IF b<>6127 THEN 45
32 IF k$<>"Y" THEN 40
33 POKE i-2,&72
34 POKE i-1,&BE
35 RESTORE 46
36 FOR i=&BE72 TO &BEB3
37 READ a$:a=VAL("&"+a$)
38 POKE i,a:c=c+a:NEXT
39 IF c<>6931 THEN 45
40 MEMORY &2000:LOAD"!"
41 POKE &39E2,&C3
42 POKE &39E3,&1D
43 POKE &39E4,&BE
44 CALL &BE14
45 PRINT"Data Error."
46 DATA 3E,C3,21,80,BE,32
47 DATA 24,BB,22,25,BB,C3
48 DATA 00,80
49 DATA DD,E5,DD,21,A9,BE
50 DATA 06,06,26,00,E5,C5
51 DATA DD,7E,00,CD,1E,BB
52 DATA C1,E1,DD,7E,01,20
53 DATA 0C,DD,23,DD,23,10
54 DATA EB,DD,E1,2E,00,7C
55 DATA C9,B4,67,18,F0,47
56 DATA 04,3F,08,13,01,16
57 DATA 02,12,10,00
```

Stunt Bike Simulator

(Silverbird)

Graham Davis of Chester has pulled off a stunt with Stunt Bike Simulator. With this here poke you can have infinite attempts, points and time. If you don't want a feature, remove the line of data above the corresponding remark.

```
10 ' STUNT BIKE SIMULATOR
11 ' By Graham Davis
12 DATA DD,6E,00,DD,66,01
13 DATA 22,B6,BE,2A,38,BD
14 DATA 22,A4,BE,2A,01,BB
15 DATA 22,38,BD,3E,C3,21
16 DATA A3,BE,32,0E,BC,22
17 DATA 0F,BC,C3,00,20,21
18 DATA 00,00,22,38,BD,CD
19 DATA 37,BD,21,B5,BE,22
20 DATA 95,01,C3,5F,01,21
21 DATA 00,00,22,82,82,AF
22 'Cheats
23 DATA 21,00,00,22,ED,82
24 'Inf.Points/Time
25 DATA 32,68,83
26 'Inf.Attempts
27 DATA C3,00,80,*
28 'Leave above Line
29 FOR i=&BE80 TO &BEBB
30 READ a$:a=VAL("&"+a$)
31 POKE i,a:b=b+a:NEXT
32 IF b<>5746 THEN 42
33 READ a$
34 IF a$="*" THEN 37
35 POKE i,VAL("&"+a$)
36 i=i+1:GOTO 33
37 MEMORY &2FFF:LOAD"!stu
nt1
38 MODE 1:BORDER 0
39 WINDOW#1,1,20,1,1
40 WINDOW#2,1,20,3,3
41 CALL &BE80,8000
42 PRINT"Data Error"
```

Willy Wino's Stag Party

(Silverbird)

If you run this poke you will get strange characters during loading. Don't worry about it, because when the game's wound in you'll have infinite lives and/or the ability to walk through moving objects and/or the ability to walk through spikes. Just remove lines corresponding to features you don't want, and run the poke with your game tape in the deck. Dave Benson of York is the mad axeman behind this.

```
10 'Willy Wino's Stag Par
ty
11 'Dave Benson
12 DATA 2A,38,BD,22,00,BE
13 DATA 2A,01,BB,22,38,BD
14 DATA 3E,C3,21,9A,BE,32
15 DATA 0E,BC,22,0F,BC,C3
16 DATA 00,20,2A,00,BE,22
17 DATA 38,BD,CD,37,BD,21
18 DATA AD,BE,22,8E,86,AF
19 DATA C3,0E,BC,21,00,00
20 ' **** Cheats ****
21 DATA 22,39,17,22,3B,17
22 DATA 3E,03,32,97,20
23 ' Infinite Lives
24 DATA 3E,C3,32,8A,16
25 ' Remove Alien Col.
26 DATA 3E,C3,32,A7,16
27 ' Remove Spike Col.
28 DATA C3,00,01,*
29 FOR i=&BE80 TO &BEAF
30 READ a$:a=VAL("&"+a$)
31 POKE i,a:b=b+a:NEXT
32 IF b<>4641 THEN 42
33 READ a$
34 IF a$="*" THEN 37
35 POKE i,VAL("&"+a$)
36 i=i+1:GOTO 33
37 MODE 1:BORDER 0:INK 0
,0
38 WINDOW #1,1,20,3,3
39 WINDOW #2,1,20,5,5
40 MEMORY &3DFF:LOAD"!WIL
LY1
41 CALL &BE80
42 PRINT"Data Error"
```

Pro BMX Simulator

(Codemasters Plus)

This will allow you to qualify for all rounds even though you've failed. The CPC will say *Game Over*, but don't believe a word of it. The poke also fixes a bug in the expert version – it allows you to play all five screens rather than the four the Oliver twins have set it to.

Rewind either side and run the poke. It will work out which version has loaded and act on it accordingly.

```
10 'Pro. BMX Simulator
11 'Both EXPERT & STANDARD
12 'Catered For.
13 'Written By Steve Miles
14 '(C) CPC Computing
15 DATA F3,31,00,C0,21,30
16 DATA AC,E5,11,00,02,3E
17 DATA 16,CD,A1,BC,21,97
18 DATA BE,22,6F,AC,C9,3A
19 DATA A0,4A,B7,21,B0,4A
20 DATA 11,A2,4A,28,06,21
21 DATA B3,4A,11,A5,4A,AF
22 DATA 36,05,12,C3,40,00
23 FOR i=&BE80 TO &BEAF
24 READ a$:a=VAL("&"+a$)
25 POKE i,a:b=b+a:NEXT
26 IF b<>4625 THEN 28
27 CALL &BE80
28 PRINT"Data Error"
```

MICROSNIPS plc

PHONE ORDERS WELCOME

Dept 'CPC' 37 SEA VIEW ROAD · WALLASEY · MERSEYSIDE L45 4QN

AMSTRAD MAIN DEALER

ALL PRICES INCLUDE VAT

COMPUTERS

AMSTRAD CPC 6128 + Mono Monitor + Joystick + Software **£289.95**
AMSTRAD CPC 6128 + Colour Monitor + Joystick + Software **£389.95**
AMSTRAD PCW 8256 WORD PROCESSOR **£399.00**
AMSTRAD PCW 8512 DUAL DRIVE **£499.00**
AMSTRAD PCW 9512 **£559.00**
AMSTRAD 464 inc. Mono Monitor + 17 Super Educational Programs + Games + Joystick + Free Trojan Light Pen **£199.95**
AMSTRAD 464 (as above) but Colour Monitor **£299.95**
NEW PC200 – IBM COMPATIBLE inc. MSDOS + Software **only £299.00**

★ **SPECIAL OFFER** ★

AMSTRAD 464, COLOUR MONITOR, 17 Games, Joystick, TV Tuner, Clock-Radio + Computer Desk **only £399.00**
AS ABOVE BUT CPC6128 **£499.00**
Limited quantity of 256k Silicon Discs, 256k Upgrades by DK at £79.95 to clear

RAM PACKS AND EXPANSIONS

MULTIFACE 2+ (AMS) **£44.95**
64K MEMORY EXPANSION for AMSTRAD 464 **£49.95**
256K SILICON DISC for 464 or 6128 INC. 64K OPERATING SYSTEM **£129.95**
256K MEMORY EXPANSION 464/6128 (STATE MODEL) **£99.94**

DISC DRIVES + ACCESSORIES

AMS FD1 DISC DRIVE (additional) **£99.95**
AMS DD1 DISC DRIVE (inc. interface) **£159.95**
AMS DL2 CABLE FOR FD1 **£8.95**
5¼" CLEANING DISC with FLUID **£5.95**
3" LOCKABLE DISC BOX (HOLDS 20) **£7.95**
LOCKABLE DISC BOX (holds 100 5¼" disks) **£8.95**
CF-2 3" DISCS (PACK 10) (AMSOFT) **£18.95** MAXELL **£18.95**

HOME AND OFFICE

PANASONIC FNP300 DIGITAL PHOTOCOPIER (CHOICE 8 COLOUR CARTRIDGE, COPIES A4 SIZE, EDITING FUNCTION) **£449.95**
CANON FAX-110 FACSIMILE UNIT **£1499.00**
ANTI-GLARE SCREEN AMSTRAD (MONO) **£19.95**
ANTI-GLARE SCREEN AMSTRAD (COLOUR) (EARTHED) **£49.95**

PRINTERS AND ACCESSORIES

MICRO P MP135 (PARALLEL) **£149.95**
PANASONIC KX-P1081 **£179.95**
OKIMATE 20 COLOUR PRINTER **£139.95**
STAR LC10 COLOUR **£279.00**
STAR LC10 (144 CPS) (HIGHLY ACCLAIMED) **£229.00**
CITIZEN 120D + PAR INTERFACE **£179.95**
CANON PW1080A – 160CPS *Limited offer price **£159.95**
AMSTRAD DMP2160 CENT (INC. +3/AMS CPC CABLE) **£159.95**
AMSTRAD 36W CENT/34W 1m **£9.95** 2m **£10.95**

RIBBONS

36W CENTRONICS/34W + Screen dump soft) **£14.95**
PCW 9512 **£4.95** (PACK 12) **£45.00**
DMP 1 **£3.99** CITIZEN 120D **£4.99**
OKIMATE 20 (black) **£6.99** DMP 2000/2160/3000/3160 **£4.99**
OKIMATE 20 (colour) **£7.99** DMP 4000 **£5.99**
STAR NL10 RIBBON **£5.95** AMS 8256/8512 **£4.99**

DATA RECORDERS AND ACCESSORIES

6128 DATA RECORDER + CASSETTE LEAD **£22.95**
WET SYSTEM CLEANING CASSETTE **£4.99**
LIQUID HEAD CLEANER + TAPE **£3.99**

JOYSTICKS

HAND BLASTER (MICROSWITCHED) **£6.95**
CHEETAH 125+ (with +2 adapter) **£6.99**
MACH 1 (with +2 adapter) MS **£14.95**
QUICKSHOT II **£6.99**
QUICKSHOT II TURBO **£12.95**
KONIX SPEEDKING **£11.95**
NEW 'RAM DELTA' M/SWITCH/STEEL SHAFT **£9.95**
AMS JOY AUTOFIRE ADAPTER **£9.95**

GRAPHICS AND SOUND DEVICES

MOUSE MAT (spongy) **£6.99**
MICROSNIPS MOUSE MAT **£4.99**
DK-LIGHTPEN 464 **£18.50**
PCW KEMPSTON MOUSE (inc WRITE HAND MAN) **£89.95**
AMX MOUSE (AMSTRAD) (inc AMX ART) **£59.95**
AMX MOUSE (PCW) (inc AMX ART) **£79.95**
AMX MOUSE + STOP PRESS **£74.95**
KEMPSTON MOUSE with BLUEPRINT (AMS) **£64.95**
TROJAN LIGHTPEN (AMS 464) **£19.95**
TROJAN LIGHTPEN (AMS PCW) **£29.95**
TROJAN PC LIGHTPEN **£19.95**
RAM MUSIC MACHINE (AMS) **£47.50** DISC **£54.95**
AMDRUM DIGITAL DRUM SYSTEM **£29.95**
DK STEREO/SPEECH CPC TAPE **£27.95** ROM (tape) **£37.50**

MODEMS

*LINNET V21/23 INTELLIGENT, AUTO MODEM **£169.95**
RS232 I/F (PCW) **£64.50**
RS232 I/F (AMS) INC COMSTAR ROM **£59.95**
AMSTRAD PC V21/23 INTELLIGENT CARD MODEM + DATATALK SOFTWARE **£169.95**
AMSTRAD MC2400 PC CARD MODEM **£224.95**
LINKMASTER PC-PPC TRANSFER KIT **£22.95**

POWER SUPPLIES AND PLUGS

SURGE PROTECTOR PLUG **£14.95**
AMS464 MODULATOR FOR TV **£14.95***
AMS 664/6128 MODULATOR FOR TV **£29.95***
*Europe, £3, P+P, other countries, £6 P+P
SURGE PROTECTOR 4 WAY TRAILING SOCKET, INC. LEAD-PLUG **£19.95**
CPC464 EXTENSION LEADS **£5.95**
CPC 6128/664 EXT LEADS **£8.95**

PROTECTIVE COVERS

AMS PC1512 MONITOR/SYSTEM UNIT COVER **£12.95**
AMS PC1512 KEYBOARD COVER **£6.99**
AMS 464 KEYBOARD **£5.99**
DMP2000/3000 **£6.95**
AMSTRAD 6128 KEYBOARD **£6.95**
AMS PCW8256/8512 **£1595**
AMS CPC COLOUR MONITOR **£7.95** MONO **£6.95**

ACCEPTED · BARCLAYCARD ACCEPTED · AMERICAN EXPRESS

LOMBARD CREDIT CHARGE

LICENCED CREDIT BROKER

FREE CATALOGUE WITH FIRST ORDER

POSTAGE & PACKING
Under £50 add £2 Under £100 add £5
Over £100 add £10 Courier Delivery
Europe – Full price shown covers carriage.
Non-Europe add 5%
Visa Mastercharge Postgiro
International accepted
NOT Postbank Postcheque

051-630 3013
24 Hr. CUSTOMER ENQUIRIES
051-691 2008 MAIL ORDER
051-630 5396 ACCOUNTS
051-639 2714 FAX. NUMBER

The truth about TELEX

How much does it cost to go on Telex?

You could go the conventional way and buy a dedicated Telex machine. The cheapest will cost you £1,604 (the Whisper), the dearest £2,892 (the Cheetah). You will also need a separate telephone line, costing £101 to install, plus £404 a year rental. That's a total outlay over the first year of a minimum of £2,109. (All prices include VAT.)

Or you could do what more and more Amstrad users are doing – use your computer to double as a Telex machine. And just use your ordinary telephone!

How do I turn my Amstrad into a Telex machine?

All you need is a modem and appropriate communications software (see the advertisements in this issue), a telephone, and a subscription to *MicroLink*.

Telex is just one of a growing number of services available to Amstrad users on *MicroLink*. With MicroLink you can also read the news as it happens, go teleshopping, create your own closed user group, send telemessages and electronic mail right round the world, download free programs directly into your micro . . . and much more.

But why use Telex?

Because it's a standard means of instant communication between businesses. Today there are 150,000 Telex machines in use in Britain – and more than 2 million worldwide. Telex dramatically speed up business communications – it's just as quick as using the phone but far more efficient, because you have a hard copy of every "conversation" for your records.

But there's a big bonus you get when you use *MicroLink* for Telex that the conventional way doesn't offer.

With *MicroLink* you don't HAVE to be in your office to send or receive Telex messages. You can just as easily use your computer at home (or even a portable). So now you can check whether there are any Telex messages waiting for you – anywhere, anytime. How's that for your business efficiency?

For further details phone 0625 878888

CPC COMPUTING MAIL ORDER OFFERS

Perfect Christmas presents for you and your children

SAVE £5!
RRP £39.95
Our price £34.95

BLOC-TRONIC

Now you don't have to be a genius to create your own electronic devices. Using Bloc-Tronic you can build projects such as radios, amplifiers and burglar alarms within minutes!

Bloc-Tronic consists of a number of see-through plastic bricks, each containing an electronic component. They have no sharp edges and can be connected to each other in a multitude of ways using a patent connection system, consisting of two dove-tail and two slot connectors.

Although Bloc-Tronic is an excellent way to learn about electronics, the whole kit can be arranged, without any knowledge, into 163 different circuits just by following the instructions.

A comprehensive, fully illustrated instruction manual comes with the kit, showing and documenting circuit diagrams, taking you from the simplest light bulb/battery circuits up to light-activated radios.

Bloc-Tronic is the ideal system for children and adults alike who wish to learn more about electronics. And at the introductory price of only £34.95 it makes an excellent present, which will provide hours of entertainment and education.

Just think, more than 160 presents in one!

WHAT YOU GET

- 54 blocks
- 2 Test lines
- 1 Battery case
- 1 Transformer
- 1 Current meter
- 1 Earphone
- 1 Tuner
- 1 Loudspeaker
- 1 Amplifier
- 1 Microphone
- 1 Aerial

SOME OF THE PROJECTS

Lie detector	Radio
Metronome	Wireless telegraph
Grip evaluator	Mosquito repeller
Siren	Bird simulator
Reaction tester	Organ

COMPUROBOT II

At a saving of £14 Compurobot II, makes an ideal, inexpensive fun gift

As well as being great fun, Compurobot II is the ideal way for you and your children to learn about programming. Commands such as, "move forward", "turn" and "dance" are entered in sequence – just as you would write a program – and when you press the GO key, off he goes.

But you don't need to program him, as you can play with him interactively by selecting one action at a time. He also has a remote controller, so you can steer him all round the room from your armchair.

Compurobot II can dance, play music and games, draw and write, teach basic programming skills and remember up to 64 commands.

He is controlled using an infra-red remote control and comes with headlights, silver bars, a voice box, eyes, a custom name plate, a crayon holder, strong mechanical arms and a function light which flashes after each key entry.

He has a demo mode too. If you select this, he will show you all the tricks he can do and, if you give him a crayon, he will even write for you!

RRP £49.95
OUR PRICE £35.95

TO ORDER PLEASE USE THE FORM ON PAGE 53

Have you missed any issues of CPC COMPUTING

YOU KNOW THAT *CPC Computing* has been the most informative, feature-packed and up to the minute magazine for CPC users. Month by month it has built up into a comprehensive reference library of reviews, type-ins, tutorials and much, much more.

WE KNOW THAT you'll want to complete your collection. So if you're missing any of this year's issues, you'll want to take advantage of our special offer. Select any two back issues and they can be yours for the price of one! Buy FIVE issues and pay for only TWO!

This is a once-only, never to be repeated offer. So order your back issues now, and fill those gaps in your collection

ORDER FORM

Please send me the following back issues of CPC Computing at £1.25 for two issues, £2.50 for five issues. Add £4 Europe, £10 overseas.

1988 ISSUES (Please tick)

- ☐ January
- ☐ February
- ☐ March
- ☐ April
- ☐ May
- ☐ June
- ☐ July
- ☐ August
- ☐ September
- ☐ October
- ☐ November

Total amount to pay £ _____

Payment: Please indicate method

☐ Cheques made payable to Database Publications

☐ Please debit my credit card no:

Access/Visa Expiry date / /

Signed _____

Name _____

Address _____

_____

Postcode _____

Send to: **Database Publications, FREEPOST, Macclesfield, Cheshire SK10 4YB.**

CPC12

CPC COMPUTING MAIL ORDER FORM

Overseas orders exclusively air mail
Valid until December 31, 1988

A prices include postage, packing and VAT
Products are offered subject to availability

(✔) £ p

Back issues *(see opposite)*

£1.25 for two
£2.50 for five

Jan 1988	6223	
Feb 1988	6224	
Mar 1988	6225	
April 1988	6226	
May 1988	6227	
June 1988	6228	
July 1988	6229	
Aug 1988	6230	
Sept 1988	6231	
Oct 1988	6232	
Nov 1988	6233	

Add £4 Europe, £10 Overseas

Mini Office II plus all three Fun School I

NEW

(see page 38) 6177/6178 — Tape £19.95 [ ] Disc £29.95 [ ]

Add £2 for Europe and Eire/£5 for Overseas

Time and Magic

Tape £14.95 6070 [ ]
Disc £14.95 6071 [ ]

Add £2 for Europe and Eire; £5 for Overseas

Mini Office II

Tape £14.95 6086 [ ]
Disc £19.95 6087 [ ]

Add £2 for Europe and Eire; £5 for Overseas

Lancelot

Tape £14.95 6171 [ ]
Disc £19.95 6172 [ ]

Add £2 for Europe and Eire; £5 for Overseas

Fun School II

NEW

(see page 45)

		Tape £9.95	Disc £12.95
Under 6	6179/6180	[ ]	[ ]
6 to 8	6181/6182	[ ]	[ ]
Over 8	6183/6184	[ ]	[ ]

Add £1 for Europe and Eire; £2 for Overseas

Bloc-tronic

(see page 51) £34.95 6156 [ ]

Add £6 for Europe and Eire; £12 for Overseas

Compurobot II

(see page 51) £35.95 6198 [ ]

Add £6 for Europe and Eire; £15 for Overseas

Psycho Pig UXB

NEW

(see page 30) 6167/6168 — Tape £7.99 [ ] Disc £11.99 [ ]

Add £1 for Europe and Eire; £2 for Overseas

Hot Shot

NEW

(see page 34) 6169/6170 — Tape £7.99 [ ] Disc £11.99 [ ]

Add £1 for Europe and Eire; £2 for Overseas

Dust Covers

CPC 464/664 Keyboard	£3.95	6037	[ ]
CPC 6128 Keyboard	£3.95	6076	[ ]
CPC Green screen Monitor	£5.95	6093	[ ]
CPC Colour monitor	£5.95	6094	[ ]
DMP 2000/3000 Printer	£3.95	6095	[ ]

Add £1 for Europe and Eire; £2 for Overseas

Binder

£3.95 6038 [ ]

Add £3 for Europe and Eire; £7 for Overseas

Screen Filter *(see page 61)*

Colour Monitor £9.95 6157 [ ]

Add £1 for Europe and Eire; £2 for Overseas

➡ ➡ ➡ ➡ ➡ ➡ ➡ ➡ ➡ TOTAL

Send to: Database Publications, FREEPOST, Macclesfield, Cheshire SK10 4YB

(No stamp needed if posted in UK) *Please allow up to 28 days for delivery*

Order at any time of the day or night

Credit Card holders phone: **0625 879920**

Fax Orders:	*Orders by Prestel:*	*MicroLink/Telecom Gold*
0625 879966	**Key *89, then 614568383**	**72:MAG001**

Don't forget to give your name, address and credit card number

Payment: please indicate method (✔)

Expiry Date [/]

[ ] Access/Mastercard/Eurocard/Barclaycard/Visa
No. [ ][ ][ ][ ] [ ][ ][ ][ ] [ ][ ][ ][ ] [ ][ ][ ][ ]

[ ] Cheque/Eurocheque made payable to Database Publications Ltd.

Name _____ Signed _____

Address _____

_____ Post Code _____

Daytime telephone number in case of queries _____

CPC12

DON'T MISS THE NEXT ISSUE OF

To commemorate the merger of CPC Computing and ACU, there will be a money saving voucher printed in ACU for the next three months – starting from the January issue.

If you collect all three vouchers and send them to us, we'll send you a FREE cassette (or a disc for £1.99) containing playable demos of the latest utility and games software. There will be complete arcade and strategy games, and some of the best type-ins from back issues of ACU.

So don't miss out on this exceptional offer. Ask your newsagent to reserve you a copy, today!

TRYBRIDGE SOFTWARE DISTRIBUTION

Title	Amstrad Cass	Amstrad Disc
Ace	2.00	–
Ace of Aces	2.95	–
Action Service	6.95	9.95
Afterburner	7.45	10.45
Alien Syndrome	6.45	9.95
Army Moves	3.50	–
Arcade Force Four	7.95	10.95
Arc of Yesod	–	2.95
Arkanoid	3.50	–
Arkanoid 2 Revenge	6.50	9.95
Army Moves	3.95	–
Artura	6.95	9.95
Auf Monty	2.95	–
Avenger	2.95	–
Back to Future	–	2.95
Ballblazer	–	2.95
Ballbreaker	2.00	–
Barbarian Psygnosis	6.95	–
Barbarian 2 Palace	6.95	9.95
Barde Tale 1	7.45	10.95
Barry McGuigan	2.95	–
Basket Master	3.50	–
Batman Caped Crusader	6.25	9.95
Battle of Planets	2.00	–
Best of Elite Vol 1	3.95	–
Beyond the Ice Palace	6.95	9.95
Big 4	3.50	–
Big Sleaze	2.00	–
Bionic Commando	7.45	10.95
Black Tiger	7.45	10.95
Bobby Bearing	2.00	–
Bubble Bobble	5.95	9.95
Buggy Boy	6.95	9.95
Butcher Hill	7.45	10.95
California Games	7.45	10.95
Captain Blood	6.95	9.95
Carrier Command	9.95	13.95
Classic Collection	3.00	–
Cobra	3.95	–
Combat School	5.95	9.95
Comet Game	1.00	–
Cybernoid 1 or 2	7.45	10.95
Daley Thompson 88	6.50	9.95
Dan Dare	2.00	–
Dandy	2.50	2.95
Dark Fusion	6.95	9.95
Dark Side	6.95	9.95
Doomsday Blues	2.95	–
Double Dragon	6.95	9.95
Dragon Ninja	6.95	9.95
Dragonslair	2.95	–
Druid	2.00	3.00
Dynamite Dan 2	2.95	3.95
Echelon	7.45	10.95
Eidolon	2.00	2.95
Elite 6 pack 1, 2 or 3	6.95	9.95
Emlyn Hughes Football	6.95	9.95
Empire	2.00	–
Empire Strikes Back	6.95	9.95
Espionage	6.95	9.95
Explorer	–	2.95
Eye	3.95	–
4x4 Off Road Racing	7.45	10.95
F16 Combat Pilot	9.95	13.95
Fair Means or Foul	6.95	9.95
Fernandez Must Die	6.95	9.95
Final Matrix	2.00	–
Fish	–	11.95
Fists & Throttles	8.45	9.95
Five Computer Hits	3.95	–
Fivestar 1, 2 or 3	6.95	–
Flight Ace	9.95	12.95
Flintstones	6.95	9.95
Flying Shark	6.00	9.95
Fox Fights Back	6.95	9.95
Football Director	6.00	–
F15 Strike Eagle	6.95	9.95
Football Manager	2.95	6.50
Football Manager 2	6.95	9.95
Freddy Hardest	2.95	–
Game Over	3.50	–
Game Over 2	6.95	9.95
Game Set & Match	8.95	11.95
Game Set & Match 2	8.95	11.95
Garfield	6.50	–
Gauntlet	2.95	–
Gauntlet 2	7.45	10.95
Get Dexter 2	6.95	9.95
Giants	10.45	13.95
G.I. Hero	5.95	9.95
G. Lineker Hotshot	7.45	10.95
Gold Silver Bronze	10.45	16.95
Guerilla Wars	6.45	9.95
Great Escape	3.50	–
Guild of Thieves	–	13.95
Gunship	9.95	13.95
Headcoach	2.95	–
Head over Heels	3.50	–
Heartland	–	2.95
Highlander	3.95	–
Hijack	2.00	2.95
Hive	2.00	2.95
Hotshot	6.95	8.95
Hunchback Adv	2.95	–
Hydrofool	3.50	–
Ikari Warriors	6.95	9.95
Impact	6.95	–
Imp Mission 2	7.45	10.45
Impossaball	2.50	–
Ingrids Back	9.95	12.95
Inf Karate	2.95	6.95
Into Eagles Nest	2.00	–
Jailbreak	2.95	–
Jewels of Darkness	9.95	13.95
Karate Ace	10.45	12.95
Kettle	2.00	–
Knightorc	9.95	9.95
Konami Collection	6.95	12.95
Krakout	2.95	–
Kung Fu Master	–	2.95
Lancelot	9.95	11.95
Lazer Squad	6.95	–
Last Ninja 2	8.95	10.95
Leaderboard Par 3	10.95	13.95
Live Ammo	6.95	9.95
Live & Let Die	6.95	9.95
Madballs	5.95	–
Mag Max	3.50	–
Magnificent 7	6.95	12.95
Marauder	7.45	10.95
Mario Bros	3.50	–
Match Day	2.95	–
Match Day 2	5.95	9.95
Mega Apocalypse	7.45	10.45
Mercenary	3.50	–
Mermaid Madness	2.00	2.95
Meteplex	2.95	–
Metrocross	2.95	–
Miami Vice	2.95	–
Mickey Mouse	7.45	10.95
Mindfighter	9.95	13.95
Mini Office 2	9.95	13.95
Mini Putt	6.95	10.45
Motor Massacre	6.95	9.95
Movie	2.95	–
Mutants	2.95	–
Mystery of Nile	2.00	–
1943	7.45	10.95
19 Bootcamp	6.95	9.95
Netherworld	7.45	10.95
Nigel Mansell GP	6.95	10.45
Nightraider	7.45	10.95
Nosferatu the Vampire	2.95	–
Ocean Compilation	7.95	11.95
Operation Wolf	5.95	9.95
Outrun	7.45	10.45
Overlander	6.95	9.95
Paciand	6.25	9.95
Pacmania	5.95	9.95
Pallitron	2.00	–
Pawn	–	13.95
Pepsi Mad Mix	5.95	9.95
Peter Beardsley	6.25	9.95
Pirates	9.95	13.95
Platoon	6.95	9.95
Predator	7.45	10.95
Prodigy	–	2.95
Pro Soccer Sim	6.95	9.95
Race Against Time	4.95	–
Rambo 3	6.45	9.95
Rasputin	1.95	–
Red October	9.95	13.95
Return of Jedi	6.95	9.95
Road Blasters	7.45	10.95
Robocop	6.45	9.95
Rogue Trooper	2.00	–
Rolling Thunder	7.45	10.95
Roy of Rovers	7.45	10.95
R. Tyes	6.95	10.45
Runestone	2.00	–
720	7.45	10.95
Sal Combat	2.95	–
Salamander	6.25	–
Samurai Warrior	5.95	9.95
Savage	5.95	9.95
Shadowfire	2.00	2.95
Shadow Skimmer	2.00	–
Shockway Rider	2.95	–
Short Circuit	3.95	–
Sidearms	7.45	10.95
Silent Service	6.95	9.95
Silicon Dreams	9.95	9.95
Skatecrazy	7.45	10.95
Slap Fight	3.95	–
Solid Gold	7.45	10.95
Space Age	10.45	12.95
Spy V Spy Arctic	2.95	–
Spy V Spy Island	–	2.95
Spy V Spy Trilogy	6.95	9.95
Starstrike 2	2.95	–
Star Wars	6.95	9.95
Streetfighter	7.45	10.95
Street Soccer	7.45	10.95
Strike Force Cobra	2.95	–
Super Cycle	3.95	–
Super Hangon	7.45	10.95
Superaleuth	2.00	–
Supersports	7.45	10.95
Supreme Challenge	8.95	11.95
3 Weeks in Paradise	2.00	–
10 Mega Games	9.95	10.95
20 Charibusters	6.95	–
Taipan	3.95	–
Taito Coin Ops	8.95	11.95
Target Renegade	5.95	9.95
Techno Cop	7.45	10.95
Tempest	2.95	–
Terrapods	6.95	–
The Games Winter	7.45	10.95
Thunderblade	7.45	10.45
Thundercats	6.95	9.95
Tiger Road	7.45	10.45
Time & Magik	9.95	9.95
Time Stood Still	6.00	9.95
Top Gun	3.95	–
Trackuit Manager	6.95	9.95
Train Escape	6.95	10.45
Trantor	7.45	10.95
Triv Pursuit	9.95	12.95
Triv Pursuit New Begin	9.95	12.95
T Wrecks	7.45	10.95
Tyger Tyger	6.95	9.95
Typhoon	6.00	9.95
Untouchables	6.25	9.95
Victory Road	5.95	9.95
Vindicator	5.95	9.95
Virus	6.95	9.95
Vixen	6.95	10.45
Warlock	2.00	–
We Are The Champions	6.95	12.95
WEC Le Mans	6.25	9.95
Whirligig	5.95	9.95
Winter Sports	–	2.95
Wizball	3.95	–
World Series Baseball	2.95	–
Xarq	–	2.95

Please send cheque/P.O./Access, Visa number and expiry date to:

TRYBRIDGE LTD

72 North Street, Romford, Essex RM1 1DA

Please remember to state the make and model of your computer when ordering. P&P INC. UK on orders over £5.00. Under £5.00 and Europe add £1.00 per item. Elsewhere add £2.00 per item for AIR MAIL.

Telephone order: 0708 765271

DOUBLE-JAY Software

Christmas Stocking fillers for CPC 6128 and CP/M Plus users

CASH BOOK. Simple Cash Analysis – an electronic day journal ideal for detailed records of income and expenditure, cost control, petty cash, standing orders and even small business accounts. **£13 including manual and postage**

FLIGHT PLANNER. A must for anyone interested in aviation. Flight Planner is a navigation aid. Enter latitude, longitude, airspeed and wind speed/direction for up to nine waypoints and the ground speed, course to steer, distance and sector flight times are computed and displayed instantly. **£13 including manual and postage**

★ NEW ★

MENU FILE. Bachelor, home-manager or professional caterer – you'll find MENU FILE a valuable aid to menu planning and food costing. The database consists of a STOCK and PRICE LIST referenced by separate RECIPE FILES all user accessible. **£20 including manual and postage**

★ XMAS FREEBIE ★

POOLS PREDICTION. Our pools prediction program works on the premise that relative team strength determines match results. It provides a framework which can be used to store a user calculated RELATIVE STRENGTH FACTOR for each team. Results for any two matched teams can then be predicted. Random number generator included. **FREE** when you purchase CASH BOOK, FLIGHT PLANNER or MENU FILE.

Cheques and Postal Orders to:

DOUBLE-JAY Software and Services, P.O. Box 5, Redruth, Cornwall TR16 4JJ

Overseas orders add £1 – Please state computer type when ordering

DOUBLE-JAY – Practical Software at realistic prices

POOLS FORECASTER (ALL CPCs)

FOR POOLS AND LEAGUE SOCCER FOLLOWERS

MENU-DRIVEN by single keypress. Fast, simple input. Manual supplied.
LEAGUE FILE–Football and Scottish leagues. Non-league teams can be added. Tables show full home/away form, sequences since a loss/draw/win and eight recent results.
UPDATES NOT NEEDED–User can modify league for future seasons or create entirely new league, e.g. Australian. Capacity exists for 144 teams in 10 divisions.
FLEXIBLE FORECASTING–8 selectable factors cover points/goal diff/result analysis using recent/season records and total/home-away form. Also cup adjustment and 2 match score factors. Two user formulae each give home/draw/away percents in one report with score forecasts. Sorted selection lists.
HARD COPY or view compact 80-col reports of selection lists, forecast data, sequence lists, league tables, match details and team list. Printer use is optional.
FORM SUMMARY on screen, compares statistics of teams in any match.

TAPE £14.50 – DISC £17 – Cheque/PO (state 464/664/6128) or SAE for details
BUG-HUNTERS (CPC), 71 Milford Close, Abbey Wood, London SE2 0DS

Also LEAGUE SPORT for fans of Rugby, Hockey, American Football etc. Differs from above so write for details. Tape £11.50 Disc £14

Matrix Software Hire

The cheapest way to play them all!

Top games titles for
Amstrad, Commodore and Spectrum
Disk and tape Amstrad/Commodore
Please state system

Send large SAE for details
MATRIX LEISURE CLUB
(Dept CPC) 271 Stansted Road, Bishops Stortford, Herts CM23 2BT

PRE-SCHOOL, PRIMARY, JUNIOR

Education

Designed by
Experienced Teachers
For use in School and Home

Wide range of programs
For AMSTRAD
CPC–PCW–PC1512–Atari ST

CASSETTE £9.00–DISC £12.00
Send SAE for List. Stating Amstrad model and child's age.

ARC (CA12), 51 Coniston Crescent, HUMBERSTON, SOUTH HUMBERSIDE DN36 4BA. (0472) 812226

Santa's Dungeons

IN an attempt to stop him delivering presents, the Society Against Enjoying Christmas has trapped Santa in an underground dungeon. In a definite case of overkill they've packed the place with 200 sticks of dynamite, fuses merrily fizzling with Christmas cheer.

And if the dynamite doesn't give Santa a terminal hangover, the four assassins stalking him surely will! Or will they? Can you wangle Santa out of a fix? All you have to do is rush round extinguishing the fuses while avoiding the gents with the wicked smiles and blades to match.

Of course all this exercise will sap Santa's limited strength, but fortunately his chief elf has managed to smuggle in some Christmas puddings. These have the effect of restoring Santa's energy, so giving more time to complete the maze.

Throughout the dungeon are mystical doors which close after they've been passed through. To reopen one, simply collect a key. Santa is controlled by the Z,X,K and M keys, and 10 points are scored for every fuse put out. When all 200 have been seen to, a bonus score calculated from the number of unused puddings and keys is awarded.

You start with three lives, and an extra one up to a maximum of four is given every 5000 points. If the assassins catch you a life is lost, and if the timer runs out the game is over. When one level is completed you'll move on to the next. Each maze layout is the same, but the dynamite is always located randomly.

As the game is quite long – nearly 12k – I suggest you enter it section by section, and save it at regular intervals. Line 40 contains a firmware call to disable the Escape key, and the only way to quit the program is by entering Q at the title screen. If you get caught in a section of the maze with no escape, for example between two locked doors, pressing Q will abort the game, returning you to the title screen.

Finally, joystick users may like to change line 240 to:

```
240 d%=0:IF INKEY(74)=0 THEN d%=129 E
LSE IF INKEY(75)=0 THEN d%=1 ELSE IF
INKEY(72)=0 THEN d%=204 ELSE IF INKEY
(73)=0 THEN d%=76
```

Save Santa from the dungeons of despair in PHIL LAWSON's festive arcade game

```
10 REM Dynamite Dungeons
20 REM by Phil Lawson
30 REM (c) CPC Computing
40 MEMORY &5FFF:CALL &BB48:MODE 1:CLS
50 lev%=1:li%=3:ENT 1,20,10,1
60 INK 0,0:INK 1,26:INK 2,15:INK 3,6
70 GOSUB 3120:PAPER 0:CLS:GOSUB 2430
80 GOSUB 550:IF PEEK(&61D8)=&1F AND PEEK
(&61D9)=&C0 THEN 100
90 GOSUB 1850:GOSUB 1760:GOSUB 2500
100 GOSUB 790
110 RESTORE 130:FOR a=0 TO 11
120 READ x:POKE a+&7804,x:NEXT
130 DATA 0,0,2,60,3,0,0,23,15,0,&8A,&69
140 GOSUB 580:PEN 1:LOCATE 4,22:PRINT CH
R$(135);STRING$(30,CHR$(131));CHR$(139)
150 LOCATE 4,23:PRINT CHR$(133);STRING$(
30,CHR$(143));CHR$(138)
160 LOCATE 4,24:PRINT CHR$(141);STRING$(
30,CHR$(140));CHR$(142)
170 LOCATE 33,8:PRINT"SCORE";:TAGOFF
180 PEN 1:LOCATE 33,5:PRINT"LIVES":GOSUB
 540
190 WHILE PEEK(dead)=0 AND PEEK(expl)<>2
00
200 IF PEEK(s2)=5 THEN SOUND 3,200,30,5,
0,1:POKE s2,9
210 IF PEEK(s2)=2 THEN SOUND 3,500,10,5,
0,0,1:POKE s2,9
220 IF PEEK(s2)=7 THEN SOUND 3,200,5,5:P
OKE s2,9
230 POKE &7803,INT((RND*1000)/500)
240 d%=0:IF INKEY(71)=0 THEN d%=129 ELSE
 IF INKEY(63)=0 THEN d%=1 ELSE IF INKEY(
37)=0 THEN d%=204 ELSE IF INKEY(38)=0 TH
EN d%=76
250 IF INKEY(67)=0 THEN RUN
260 IF d%<>0 THEN POKE &7810,d%:CALL mov
char
270 CALL drawscr:CALL timer:IF PEEK(s1)=
3 THEN SOUND 1,800,7,5
280 sc=sc+(10*PEEK(&7805)):LOCATE 35-LEN
(STR$(sc))/2,9:PRINT sc:POKE &7805,0
290 IF sc/5000=INT(sc/5000) AND li%<4 AN
D sc<>0 THEN li%=li%+1:GOSUB 540
300 WEND
310 POKE (PEEK(&780F)*256+PEEK(&780E)),0
:POKE &780E,&8A:POKE &780F,&69:POKE &780
D,&0:POKE &698A,6:POKE &780B,23:POKE &78
0C,15
320 IF PEEK(dead)<>0 AND PEEK(&7807)<>0
AND li%<>1 THEN li%=li%-1:GOSUB 530:POKE
 dead,0:CALL drawscr:GOTO 180
330 WHILE INKEY$<>"":WEND
340 IF PEEK(dead)=1 THEN 470
350 REM FINISHED
360 CALL calcbonus:bonus=PEEK(&7804)
370 IF bonus=0 THEN 450
380 b=0:FOR a=1 TO bonus:b=b+1:sc=sc+10
390 IF sc/5000=INT(sc/5000) AND li%<4 TH
EN li%=li%+1:GOSUB 540
400 SOUND 3,1000-(a*10),5,5
410 LOCATE 35-LEN(STR$(sc))/2,9
420 PRINT sc:IF b=4 THEN b=1
```

Turn to Page 56 ▶

PROGRAM STRUCTURE

40-90	Initialisation
100-180	Set up the screen
190-300	Main routine
310-340	Dead or screen finished?
350-460	Calculate bonus
470-520	Game over
530-530	Lost a life sound
540-540	Display number of lives
550-570	Display next level message
580-780	Set puddings, keys, doors and dynamite
790-1750	Poke character data
1760-1840	Calculate screen addresses for machine code print routine
1850-2430	Machine code data
2440-2490	Initial screen display
2500-3110	Poke map data into memory
3120-3160	Machine code addresses

◀ *From Page 55*

```
430 PEN b:LOCATE 33,8:PRINT"BONUS"
440 PEN 1:NEXT:LOCATE 33,8:PRINT"SCORE"
450 POKE expl,0:lev%=lev%+1
460 GOSUB 550:GOTO 110
470 REM KILLED
480 GOSUB 530
490 PEN 1:PAPER 3:FOR a=6 TO 8:LOCATE 16
,a:PRINT SPACE$(11):NEXT:PAPER 0:LOCATE
5,23:PRINT" Press spacebar to play again
 "
500 p%=1:WHILE INKEY$<>CHR$(32):PEN p%
510 LOCATE 17,7:PRINT"GAME OVER":p%=(p%+
1) MOD 2
520 WEND:RUN
530 FOR b=1 TO 5:FOR z=1000 TO 0 STEP -2
00:SOUND 3,z,10,7-b:NEXT:NEXT:RETURN
540 LOCATE 34,6:FOR x=1 TO li%:PRINT CHR
$(255);:NEXT:PRINT" ":RETURN
550 PEN 0:FOR a=2 TO 19:LOCATE 12,a:PRIN
T STRING$(18,CHR$(143)):NEXT
560 PEN 1:LOCATE 14,8:PRINT"Get ready fo
r":INK 3,12,9:PEN 3:LOCATE 17,10
570 PRINT"LEVEL";lev%:RETURN
580 CALL expand:RESTORE 720
590 POKE &780E,&8A:POKE &780F,&69
600 POKE &698A,6:FOR a=1 TO 12
610 READ addr:POKE addr,3:NEXT
620 FOR a=1 TO 8:READ addr:POKE addr,2
630 NEXT:FOR a=1 TO 4
640 READ addr:POKE addr,5:NEXT
650 ad=&7811:FOR a=1 TO 4:READ addr
660 POKE addr,8:POKE ad+1,addr\256:POKE
ad,addr MOD 256:POKE ad+2,1
670 POKE ad+3,0:ad=ad+4:NEXT
680 FOR a=1 TO 200
690 add=INT(RND*4200)+&6633:IF PEEK(add)
<>0 THEN 690
700 POKE add,7:NEXT:INK 3,6:CALL drawscr
710 PEN 1:FOR a=1 TO 20:LOCATE a+10,1:PR
INT CHR$(143):LOCATE a+10,20:PRINT CHR$(
143):LOCATE 11,a:PRINT CHR$(143):LOCATE
30,a:PRINT CHR$(143):NEXT:RETURN
720 DATA &6745,&674c,&6875,&687c
730 DATA &6897,&6986,&709d,&7065
740 DATA &722d,&736a,&7518,&75B0
750 DATA &66B1,&698f,&69C9,&6B05
760 DATA &6750,&6dB6,&6EC4,&714b
770 DATA &6661,&6a68,&6d6f,&73D1
780 DATA &6648,&69Fb,&6bAb,&75B5
790 addr=&627F:RESTORE 870:FOR a=0 TO 9:
FOR b=0 TO 7:READ a$,c$:chk=0
800 FOR c=1 TO 15 STEP 2:POKE addr,VAL("
&H"+MID$(a$,c,2))
810 chk=chk+PEEK(addr):addr=addr+1:NEXT
820 IF HEX$(chk,3)<>c$ THEN MODE 1:PEN 1
:PRINT"Error in character";a+1;"data":CA
LL &BB45:PRINT">>>";a$,c$;"<<<":END
830 NEXT:NEXT
840 SYMBOL 255,60,66,102,66,36,60,0,0
850 RETURN
860 REM Character 1
870 DATA 0000000000000000,000
880 DATA 0000000000000000,000
890 DATA 0000000000000000,000
900 DATA 0000000000000000,000
910 DATA 0000000000000000,000
920 DATA 0000000000000000,000
930 DATA 0000000000000000,000
940 DATA 0000000000000000,000
950 REM Character 2
960 DATA FEFFFDFEFEFFFDFE,7F0
970 DATA FEFFFDFEA5A5A5A5,68C
980 DATA F7F7F7F7F7F7F7F7,7B8
990 DATA F7F7F7F75A5A5A5A,544
1000 DATA FEFFFDFEFEFFFDFE,7F0
1010 DATA FEFFFDFEA5A5A5A5,68C
1020 DATA F7F7F7F7F7F7F7F7,7B8
1030 DATA F7F7F7F75A5A5A5A,544
1040 REM Character 3
```

MAIN VARIABLES

lev%	Level
li%	Lives
s1,s2	Flags for various sounds
sc	Score
d%	Direction

```
1050 DATA 0000000000000000,000
1060 DATA 0000000000000000,000
1070 DATA 0000000000018800,089
1080 DATA 00070E0000AFAF00,173
1090 DATA 110F1F0801AFAF88,22E
1100 DATA 030F0F4C23AFAF8C,27A
1110 DATA 030F0F4C63AFAFAC,2DA
1120 DATA 314F5F4810F0F080,397
1130 REM Character 4
1140 DATA 70F0F0E06000E168,4D9
1150 DATA 60300F6860C37868,30A
1160 DATA 6096966860B47868,3E8
1170 DATA 6087966860C37868,3E8
1180 DATA 60870F6860870F68,2BC
1190 DATA 60B4F06860969668,460
1200 DATA 60C3786860300F68,30A
1210 DATA 6000E16870F0F0E0,4D9
1220 REM Character 5
1230 DATA 70F0F0E0610F0F68,417
1240 DATA 61F0F06861969668,49E
1250 DATA 61A55A6861C33C68,390
1260 DATA 61F0F068610F0F68,390
1270 DATA 61C30F68610F0F68,282
1280 DATA 610F0F6861F0F068,390
1290 DATA 61871E6861F0F068,417
1300 DATA 610F0F6870F0F0E0,417
1310 REM Character 6
1320 DATA 0000000000000000,000
1330 DATA 0000000000000000,000
1340 DATA 000003080000060C,01D
1350 DATA 00000C060F0F0C06,042
1360 DATA 0F0F0C060D080C06,057
1370 DATA 0D08060C00000308,032
1380 DATA 0000000000000000,000
1390 DATA 0000000000000000,000
1400 REM Character 7
1410 DATA 000000000000E000,0E0
1420 DATA 0010FE000031FF80,2BE
1430 DATA 0073FE8E00F7EC87,469
1440 DATA 00F0E00700A5A400,320
1450 DATA 1018120010A5B400,1A3
1460 DATA 105A5A0000842400,16C
1470 DATA 0052480000308000,14A
1480 DATA 0000000000000000,000
1490 REM Character 8
1500 DATA 0202020027272700,07B
1510 DATA 0303030010101000,039
1520 DATA 0080808011DDDDCC,417
1530 DATA 11DDDDCC11DDDDCC,52E
1540 DATA 11DDDDCC11DDDDCC,52E
1550 DATA 11DDDDCC11DDDDCC,52E
1560 DATA 11DDDDCC11DDDDCC,52E
1570 DATA 11DDDDCC00000000,297
1580 REM Character 9
1590 DATA 000000000030C000,0F0
1600 DATA 0070E00000D0B000,2D0
1610 DATA 00D0B00000F0F000,360
1620 DATA 0060600000030C000,1B0
1630 DATA C030C030F00000F0,3C0
1640 DATA 10C03080007 0E000,2D0
1650 DATA 0030C00000E07000,240
1660 DATA F08010F0C0000030,360
1670 REM Character 10
1680 DATA 0000000000000000,000
1690 DATA 0000000000000000,000
1700 DATA 0000000000000000,000
1710 DATA 0000000000000000,000
1720 DATA 0000000000000000,000
1730 DATA 0000000000000000,000
1740 DATA 0000000000000000,000
1750 DATA 0000000000000000,000
1760 REM Calculate addresses
1770 RESTORE 1830:padd=&61DD
1780 FOR r=0 TO 8:READ addr:FOR c=0 TO 8
1790 t$=HEX$(addr+(4*c),4)
1800 POKE padd,VAL("&H"+RIGHT$(t$,2))
1810 POKE padd+1,VAL("&H"+LEFT$(t$,2))
1820 padd=padd+2:NEXT:NEXT:RETURN
1830 DATA &c066,&c106,&c1a6,&c246
1840 DATA &c2e6,&c386,&c426,&c4c6,&c566
1850 REM Poke machine code data
1860 RESTORE 1930:ln=1930
1870 FOR adr=&7823 TO &7AA6 STEP 13
1880 READ byte$:chk=0:FOR i=0 TO 12
1890 v=VAL("&"+MID$(byte$,i*2+1,2))
1900 POKE adr+i,v:chk=chk+v:NEXT
1910 IF chk<>VAL("&"+RIGHT$(byte$,3)) TH
EN PRINT"ERROR in LINE";ln:STOP
1920 ln=ln+10:NEXT:RETURN
1930 DATA CD047A21DB612221782A0E7801414
1940 DATA 3401AFED4206090E09E5C55E16457
1950 DATA 00EB2929292929117F6219EB3D7
1960 DATA 2A217823232221787E23666F0E348
1970 DATA 02E506081A7713231A7713231A29D
1980 DATA 7713231A77132B2B2B3E088467303
1990 DATA 10E8E1C50E5009C10D20DCC1E1671
2000 DATA 230D20B71143001910AFC911FF40C
2010 DATA 6421101301010 01AFE0420023D225
2020 DATA 12AF13ED4220F33A0D78FE03C0596
2030 DATA 3C320D78C921FF64545D130103408
2040 DATA 133601EDB0110060213366063534D
2050 DATA 0E08C50608CDDB78C1130D20F54FF
2060 DATA C50604CDDB781301080009C1103E5
2070 DATA E5C91ACB27380236002310F7C951D
2080 DATA 3E4A21047977AF3205783A10783BD
2090 DATA CB7F2803064270CBBF4F0600A74B3
2100 DATA 2A0E78ED4A7EFE01C8F5E5CD71744
2110 DATA 79E1F1FE04C8FE02282CFE0528694
2120 DATA 21FE072844FE08286CED5B0E784FA
2130 DATA 3A0D783CFE0428023E09127E32330
```

```
2140 DATA 0D78220E783606C9E5CD8978E15C6
2150 DATA 18E0E5210778363C23360321E8454
2160 DATA C611C40706083EF00E3C77230D3CF
2170 DATA 20FB1910F6E118C03A09783C3251C
2180 DATA 09783E0132057818B23A10782131C
2190 DATA 0B78FE81200235C9FE01200234477
2200 DATA C923FECC200235C9FE4CC034C96DD
2210 DATA 3E01320A78C90080C0E03A0678494
2220 DATA 3D320678A7C03E033206783A08387
2230 DATA 7816005F21957919EB3A07784F428
2240 DATA 060021E7C6091A4F06083E087130B
2250 DATA 846710F93EFF21087835BEC0365BB
2260 DATA 032B353CBEC03C320A78C916003EC
2270 DATA 21FF640105137EFE02280BFE05451
2280 DATA 2811230B78B120F1C93A0478C64E6
2290 DATA 0A32047818EF3A0478C60518F444C
2300 DATA 211178CD1D7A211578CD1D7A21441
2310 DATA 1978CD1D7A211D78CD1D7AC9014D9
2320 DATA 0100E57E23666F097EFE092867479
2330 DATA FE06285E01FFFF09097EFE0928548
2340 DATA 59FE06285023014C00097EFE093D3
2350 DATA 284BFE06284201B4FF09097EFE523
2360 DATA 09283DFE062834014C0009EBE13F0
2370 DATA E523237E23666FEB424B097EA7547
2380 DATA 2824E123237EED4477237EEEFF627
2390 DATA 77C923234E23463E4D8080A92B49C
2400 DATA 77233EFFA877C93E01320A78364E8
2410 DATA 08545DA7ED423600E123237123480
2420 DATA 702B2B722B73C900000000000029F
2430 PEN 3:LOCATE 12,5:PRINT"DYNAMITE DU
NGEONS":PEN 2:RESTORE 2490:FOR a=1 TO 5
2440 READ a$:LOCATE 15,7+(a*2):PRINT a$
2450 NEXT:PEN 1:LOCATE 10,20:PRINT"Press
 spacebar to play"
2460 IF INKEY(67)=0 THEN CALL &BB45:MODE
 1:PEN 1:END
2470 IF INKEY$<>" " THEN 2460
2480 CLS:RETURN
2490 DATA "Z - LEFT","X - RIGHT","K - UP
","M - DOWN","Q - QUIT"
2500 REM poke map
2510 ln=2580:addr=&6000:RESTORE 2580
2520 READ a$,c$:WHILE a$<>"END"
2530 chk=0:FOR a=1 TO 17 STEP 2
2540 t$=MID$(a$,a,2):IF a=17 THEN t$=RIG
HT$(t$,1)+"0"
2550 POKE addr,VAL("&"+(t$)):chk=chk+PEE
K(addr):addr=addr+1:NEXT
2560 IF chk<>VAL("&"+c$) THEN CALL &BB45
:MODE 1:PRINT"Error in data line";ln:PRI
NT HEX$(chk):END
2570 ln=ln+10:READ a$,c$:WEND:RETURN
2580 DATA 3E0000000004220800,06C
2590 DATA 007FEFF4A77402EB0E,54A
2600 DATA F7020114B73422A900,2C4
2610 DATA 413E7D17A1B5FA0800,36B
2620 DATA 7F1EE1B237B402A902,3E6
2630 DATA 43C28C227097BEA902,441
2640 DATA 407AB8E6E4C402A806,50A
2650 DATA 4302A20CCE75FAE902,439
2660 DATA 77FE8FF89F04020902,3CA
2670 DATA 0608F803BFF7EFE802,4B6
2680 DATA D0EB8DF60004020802,36C
2690 DATA 5FA80117FFF5FAFF0E,5EC
2700 DATA 10ABBDD0009500000 2,2FD
2710 DATA 76AA051F00957FFF0A,3F7
2720 DATA 048AF5007E90200102,2D2
2730 DATA F5AE05EF40DFAFF906,5BE
2740 DATA 15ABDC085E10240100,237
2750 DATA 552A07FFC3D774050E,478
2760 DATA 557AF4000011144500,22D
2770 DATA 750A05EF7FF574E507,4B0
2780 DATA 45EBBD094024144500,2B3
2790 DATA 6D08017B5FAFC40502,2E8
2800 DATA 2D7BFF4140A07C8502,3E9
2810 DATA 8D0A005F7EAFC7BD0E,487
2820 DATA 2DEAEFD002A0100000,388
2830 DATA 2508281F7EBDFFFF0F,49D
2840 DATA 757FFAC140A5002000,3B4
2850 DATA 2508825B5FA16FA30E,3FC
2860 DATA 2DEAEFF1502F24380A,472
2870 DATA 890A080157A1E40A0A,322
2880 DATA 39EB7BFF542F2EEA0A,4D9
2890 DATA 0009400057010 02A0A,16B
2900 DATA 3F7DE7FFD1FFFFA202,633
2910 DATA 0C080C001C1104AE0A,19F
2920 DATA EFCF79DDFFD7242C0A,5DA
2930 DATA 085803040013AEAE0A,276
2940 DATA 7B53FE76FDF020A30A,592
2950 DATA 435002228017FFA802,315
2960 DATA 5F5FFAFABFD0222B0A,52E
2970 DATA 51400202841FAAE902,2EB
2980 DATA 557FFFDEF5F02A090A,569
2990 DATA 554200008515EAFD02,338
3000 DATA 544ABF6CBD55080506,348
3010 DATA 13CABC4C85542FFF00,3EC
3020 DATA FBC881C0F454A00407,560
3030 DATA 090AFFFD85D7BDF504,55D
3040 DATA 604BA0048510E01504,319
3050 DATA 3FEA2FF7EF77BDF506,5C7
3060 DATA 0248081002008015 04,139
3070 DATA 4ADFC99FFFF6FDF505,6C8
3080 DATA 6A104BD10712801504,284
3090 DATA 2AF77BD5D05FFDF506,5F2
3100 DATA 2A0000041FC0001100,11E
3110 DATA END,END
3120 drawscr=&7823:expand=&78AA
3130 movchar=&78E6:timer=&7999
3140 calcbonus=&79DB
3150 dead=&780A:expl=&7809
3160 s1=&7806:s2=&780D:RETURN
```

Get it right!

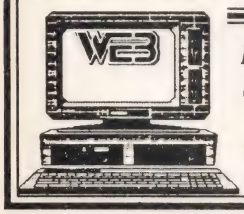
LINE	CHSUM	LINE	CHSUM	LINE	CHSUM	LINE	CHSUM	LINE	CHSUM
10	51968	650	49024	1290	03392				
20	46400	660	22112	1300	23968				
30	41792	670	02368	1310	36736	1930	24992	2550	27040
40	65312	680	43360	1320	36448	1940	30496	2560	60416
50	29536	690	27712	1330	36448	1950	34496	2570	26848
60	18976	700	09280	1340	09664	1960	53248	2580	58624
70	12480	710	45728	1350	52032	1970	25664	2590	64640
80	64192	720	63136	1360	42496	1980	38944	2600	02144
90	00480	730	17344	1370	26624	1990	34944	2610	31584
100	54912	740	24288	1380	36448	2000	42144	2620	11776
110	40480	750	22624	1390	36448	2010	48512	2630	18496
120	51680	760	54624	1400	48544	2020	58176	2640	11904
130	55776	770	19008	1410	40928	2030	33440	2650	18656
140	04384	780	20288	1420	61056	2040	04672	2660	02912
150	37920	790	26816	1430	24256	2050	07296	2670	04704
160	19136	800	16320	1440	64576	2060	13184	2680	21024
170	03360	810	33920	1450	10944	2070	26944	2690	21696
180	56448	820	31648	1460	26240	2080	34880	2700	05504
190	51296	830	27552	1470	65024	2090	10752	2710	15072
200	21888	840	36448	1480	36448	2100	45536	2720	16640
210	32992	850	27008	1490	41568	2110	33056	2730	43136
220	21312	860	04448	1500	18272	2120	30848	2740	32288
230	16448	870	36448	1510	59008	2130	04992	2750	63328
240	55552	880	36448	1520	34272	2140	03008	2760	15872
250	07648	890	36448	1530	14048	2150	36128	2770	45472
260	65408	900	36448	1540	14048	2160	11456	2780	63136
270	44480	910	36448	1550	14048	2170	62368	2790	18784
280	44416	920	36448	1560	14048	2180	37664	2800	13632
290	01632	930	36448	1570	32672	2190	24736	2810	27008
300	12864	940	36448	1580	36928	2200	27008	2820	21312
310	64416	950	18176	1590	01952	2210	16224	2830	06496
320	43680	960	62368	1600	15584	2220	37568	2840	39648
330	58848	970	48992	1610	15200	2230	53888	2850	54400
340	11360	980	34816	1620	46208	2240	23136	2860	10496
350	06464	990	51232	1630	03104	2250	09856	2870	09280
360	23200	1000	62368	1640	62592	2260	59488	2880	57760
370	65088	1010	48992	1650	15648	2270	04480	2890	43296
380	00352	1020	34816	1660	18848	2280	59264	2900	15424
390	20448	1030	51232	1670	21664	2290	48896	2910	46528
400	46592	1040	29984	1680	36448	2300	51616	2920	52896
410	03840	1050	36448	1690	36448	2310	25440	2930	27936
420	39360	1060	36448	1700	36448	2320	15136	2940	26304
430	07264	1070	59360	1710	36448	2330	02368	2950	27104
440	38624	1080	01792	1720	36448	2340	40192	2960	04544
450	53536	1090	62688	1730	36448	2350	50144	2970	31136
460	56864	1100	27520	1740	36448	2360	24736	2980	28352
470	37152	1110	13760	1750	36448	2370	43648	2990	49888
480	15392	1120	57888	1760	06336	2380	42496	3000	53632
490	36896	1130	60352	1770	57120	2390	30400	3010	01248
500	62336	1140	35904	1780	06592	2400	56000	3020	60832
510	60768	1150	36576	1790	48512	2410	22912	3030	51232
520	05024	1160	01184	1800	52192	2420	60992	3040	46592
530	47584	1170	59392	1810	43040	2430	57056	3050	46016
540	07168	1180	39392	1820	25984	2440	17440	3060	62336
550	40704	1190	18720	1830	18368	2450	54912	3070	50464
560	40800	1200	24352	1840	09856	2460	49568	3080	16640
570	15104	1210	24928	1850	17504	2470	17504	3090	63552
580	47488	1220	55776	1860	15872	2480	57472	3100	01152
590	23136	1230	62656	1870	29824	2490	43552	3110	52672
600	18304	1240	53888	1880	42208	2500	16992	3120	33568
610	32064	1250	35712	1890	10720	2510	29344	3130	28608
620	03712	1260	58592	1900	36576	2520	16000	3140	28832
630	49472	1270	33472	1910	53600	2530	29952	3150	20608
640	36864	1280	19488	1920	10240	2540	50880	3160	15936

Guide to local dealers

HAMPSHIRE

TIMATIC SYSTEMS Ltd
Computers and Data Processing Equipment

DISK DRIVES DISK SOFTWARE, CPM SOFTWARE, PRINTERS, DISK TRANSFERS, CONSUMABLES, AND SPECIALIST SOFTWARE, SUPPLIERS FOR AMSTRAD AND IBM....



ENCLOSE LARGE SAE FOR LATEST CATALOGUE

The Market, Fareham, Hampshire
PO16 0LB. Tel: (0329) 239953/236727

CUMBRIA

A SMALL SELECTION FROM OUR WAREHOUSE

HARDWARE & PERIPHERALS	RRP	WAVE	
AMSTRAD CPC464 COMPUTER + COLOUR HOME ENTERTAINMENT PACK	412.85	359.10	ANC
AMSTRAD CPC6128 COMPUTER + GREEN MON, DISC DRIVE, J/S & S/W	299.99	254.99	ANC
AMSTRAD CPC6128 COMPUTER + COLOUR MON, DISC DRIVE, J/S & S/W	399.95	356.00	ANC
AMSTRAD CPC6128 COMPUTER + COLOUR HOME ENTERTAINMENT PACK	507.90	449.10	ANC
AMSTRAD MP2 MODULATOR/PSU – CPC464/664/6128	29.95	28.45	D
FD-1 2ND 3" DISC DRIVE – CPC	99.95	89.20	C
DL-2 CABLE – FD1 TO CPC 6128/+3	6.95	5.56	E
AMSTRAD DMP2160 PAR. F&T NLQ PRINTER INC. CABLE FOR CPC	169.00	144.69	A
STAR LC10 PARALLEL F&T NLQ PRINTER (WHILE STOCKS LAST)	297.85	208.50	A
LEAD, PRINTER CENTRONICS PARALLEL – CPC/+3	14.94	7.48	F
RIBBON REINKING NYLON – DMP2000/3000 RANGE	PKT 2	4.16	F
RIBBON FABRIC-STAR LC10	PKT 2	4.60	F
RIBBON FABRIC-STAR NL10	PKT 2	5.36	F
RIBBON FABRIC-CITIZEN 120D	PKT 2	4.86	F
AMSTRAD SPARES (SERVICE EXCHANGE SEND OLD UNIT WITH ORDER)			
PRINT HEAD WITH MASK – DMP2000/2160/3000/3160/3250	69.41	46.28	E
PCB, MAIN – DMP2000	51.75	25.88	B
PCB, MAIN – DMP2160	60.38	32.34	B
PRINTER MECHANISM ASSEMBLY – DMP2000/3000	86.25	38.81	B
PRINTER MECHANISM ASSEMBLY – DMP2160	93.15	46.58	B
MOTOR, SET LF, PAPER FEED – DMP2000/2160/3000/3160	28.91	19.27	D
MOTOR, SET CR, HEAD DRIVE – DMP2000/3000	30.84	20.56	D
MOTOR, SET CR, HEAD DRIVE – DMP2160/3160	63.20	42.14	D
TRANSFORMER, MAINS – DMP2000/3000	11.03	7.35	D
TRANSFORMER, MAINS – DMP2160/3160	11.58	7.72	D
BLANK DISCS & SOFTWARE			
CAMPBELL MASTERFILE 3 (DATABASE) – 6128	39.95	25.97	E
AMSOFT 3" DISCS DS/ALL 3" DRIVES	BOX 10	17.99	E
HIGHGRADE 3.5" DS/DD 135TPI BLANK DISCS	PKT 10	8.75	D
HIGHGRADE 5.25" DS/DD 40/80T BLANK DISCS	PKT 25	8.75	D
STATEMENTS OR PAYSLIPS FOR SAGE	BOX 1000	22.26	C
AMS20L 3" DISC STORAGE BOX	HOLDS UP TO 45 DISKS	8.42	D

LARGE RANGE OF BOOKS & SOFTWARE BUSINESS/GAMES/UTILITIES ETC. ALL AT GOOD DISCOUNTS. FAR TO MANY ITEMS TO LIST HERE. SEND 3 19P STAMPS FOR LISTS. STATING FOR WHICH PRODUCTS.
ENG. MAINLAND post & ins. (A) £5.00 (B) £4.00 (C) £3.00 (D) £2.00 (E) £1.00 (F) 50p (ANC) 3 Day £9.00 Next Day £12.00. Maximum UK postal charge £6 per 20KG/£500
ALL PRICES INCLUDE VAT. All sales are subject to our Trade Terms of Trading

W.A.V.E. (Trade Dept CPCC1288)
Walney Audio Visual & Electrical Distribution
1 Buccleuch Street, Barrow-In-Furness, Cumbria, LA14 1SR
Tel: 0229-870000 (6 Lines) Hours Mon-Fri 10.00-5.00

ADVERTISERS' INDEX

Arc Education 54
Amstrad 13
Amstrad User Club 6
BBD Dust Covers 54
Bug Hunters 54
Castle Computers 21
Chester Music 8
Compumart 31
D&H Games 62
Dart Electronics 26
Database Software 4,38
DGA Software 8
Doublejay Software 54
Dynamic Marketing 62
E&J Software 37
Electric Music Research 54
Goldmark Systems 46
Intraset 37
John Morrison 27
K&M Computers 27
Kosmos 28
Mel Rica 54
MicroLink 45
Microsnips 50
MJC Supplies 36
School Software 43
Screens Microcomputers 61
SD Micro Systems 58
Selec Software 28
Silica Shop 63
Superior Software 64
Timatic Systems 58
Trybridge 10
WAVE 58

HERTS

CPC BUSINESS SOFTWARE

"Quick to set-up. . . Excellent value for money." – CPC COMPUTING

SMALL TRADERS PACK. . . £24.95 (version 2.3)
Sales & Purchase ledgers, Stock Control, Mailing List/Labeller, Utilities.
SALES INVOICER. . . £19.95 (£34.90 together)
Prints neat invoices & statements on plain or letter-headed paper.
GENERAL LEDGER. . . £19.95 (All three for £49.85)
Computerised book-keeping/reporting system. Produces Profit & Loss
NEW! STOCK ACCOUNTING. . . £39.95 (for CPC 6128 & expanded 464/664)
Integrated Stock/Invoicing/Ledger system with built-in price list.
NEW! PURCHASE ORDERING. . . £14.95 (£9.95 to STP owners)
AMSOFT 3" DISCS £2.50 each, £22.50 for ten. 3" HEAD CLEANER KIT £6.95
All systems are fully menu driven & Epson-compatible for Disc only.
Post/packing add £1(UK), £2(Abroad) Cheques/POs or SAE for catalogue

SD MICROSYSTEMS
(DEPT CPC) PO BOX 24 HITCHIN HERTS UK
☎ 0462 675106

Contact Jane Conway on 0625 878888 now to have YOUR company included in this section

Cheep database

I HAVE an Amstrad CPC464 and would like the help of one of your readers. I am a budgerigar breeder and require to use the computer to keep my breeding records. I would be willing to pay for such a program. – **Doug Cleland, Carlisle.**

● Looking at your sample of the sort of information you want to store, you don't need a program specifically written to cope with this type of record.

Your requirements should be filled by a general purpose database program such as Masterfile.

You can obtain this direct from the manufacturers: Campbell Systems, 7 Station Rd., Epping CM16 4HA.

More rom to manoeuvre

I HAVE a few queries which have been bugging me for some time now. I would be very grateful if you could provide me with the answers – and I promise not to ask any more questions for the rest of the year!

I would like to buy Protext. Looking back through the past 10 issues or so I could not find a review which told me how to fit the rom version to my CPC and the advantages / disadvantages (apart from price) between the rom and disc versions.

Could you explain to me the use of:

```
WHILE INKEY$<>"":WEND
```

in conjunction with keyboard input? Hitherto the method:

```
10 a$=INKEY$
20 a$="" THEN 10
30 continue program...
```

used to feature in the majority of programs. Then suddenly the use of the WHILE and WEND appeared. – **K.G. Harding, Gillingham.**

● The main advantages of Protext on rom are that it is instantly available without having to load it from disc, and it gives greater text space than the tape or disc versions – about 40k. All you need in order to fit it is a rom board.

The two program segments you quote do different jobs. The WHILE...WEND version waits until no key is being pressed. This is used to clear unwanted characters from the keyboard buffer, and is equivalent to:

```
10 IF INKEY$<>"" THEN GO
TO 10
```

GOTOs are frowned upon by professional programmers, so WHILE...WEND is preferred, not that it matters. Your second version waits until a key is pressed, which is the opposite process. It could be rewritten like this:

```
10 a$="":WHILE a$="":a$=
INKEY$:WEND
```

Educational programs

I HAVE recently bought a CPC6128 for my 12-year-old son, and would be grateful if you could supply me with details of some educational discs and where to buy them from. – **Monica Depasquale, Malta.**

● Apart from our own discs, regularly advertised in the mail order section, try these companies:

School Software Ltd, Tait Business Centre, Dominic St., Limerick, Ireland.

LCL Educational Software, Melody House, Grays Road, Henley-on-Thames, Oxfordshire.

Disgusted by a comma?

REGARDING Disgusted of Didcot in your September issue, I typed in the Telstar listing and all the checksums checked out. Donning my Sherlock Holmes hat I discovered that if a decimal point is entered instead of a comma in the INK 3,18 bit of line 20, and the first minus sign is omitted in line 30, the results match up with Disgusted's.

In Mr. Harrison's letter in the October issue, Control+Tab toggles between insert and overstrike mode when editing a line.

Who should I send a program to for evaluation with a view to publication? It is an accounts/banking package which took me nearly two months to write, and works on the CPC6128/664. – **J.C. Bownes, Sheffield.**

● Yes I did know about Control+Tab, but forgot all about it when writing the original reply. Thanks to all the people who wrote in to tell me what an idiot I am.

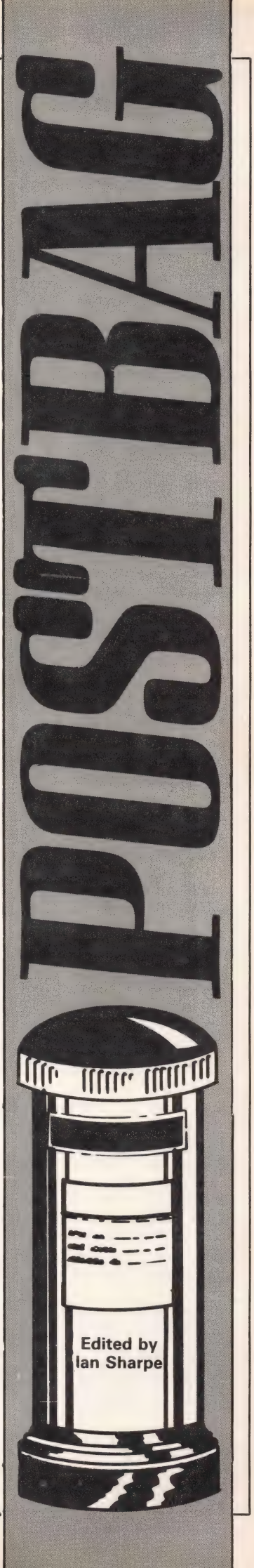
Our sister company, Database Software, is always happy to evaluate good quality programs. However, your letter does highlight some points to look out for when writing a program which you want somebody else to market.

Before you embark on a project you must be sure that the program is designed to fill a need, in other words that lots of people are going to want to buy it. No company is going to spend money distributing and advertising a program which few people will want.

You also need to make sure that there are companies which handle the sort of program you intend writing, or you're likely to be faced with a string of rejections and the hassle of marketing it yourself.

You must aim for the maximum appeal possible, and in this respect cutting out disc-owning CPC464 owners will count against your program.

Apart from the extra ram in the CPC6128, there are no extra features on these machines which can't be got round with a little extra programming on the CPC464.



Help with machine code

WITH reference to my letter printed in the September issue, I would like to add that I offer any help I can to those who have machine code queries. If posting a letter from England I ask that you enclose 28 pence, not stamps because I can't use English stamps here. – **Niall Brady, Holywell Rd., Sligo, Eire.**

● Thanks Niall. Unfortunately space prevented me including the program you sent.

Othello programs

I WOULD be grateful if you could tell me of any Othello games available other than the version in your Ten of the Best compilation. I would prefer a program that would have the playing strength of someone with a British Othello Federation ratin¬ of between 1250 and 1500.

The reason for this is that I would like to improve my game with qualification for the national finals in mind. Could you tell me who wrote the version on your compilation? – **Roy Arnold, Worksop.**

● Our version was written by Robin Nixon and was originally a magazine listing. Unfortunately I haven't seen an Othello that I as a beginner couldn't beat with a little practice.

Pen pal needed

OVER here in New Zealand we get your mag late. I'm not complaining, but the games you review are always out of stock. Can you tell me the address of Hewson so I can buy Exolon?

I would like a pen pal, preferably a boy 11 to 13 years old with lots of game experience. – **Sancar Kavavas, 13 Valdese Rise, Browns Bay, Auckland, New Zealand.**

● Hewson markets its games through Gremlin, but it is probably better if you contact a mail order house which will deal with overseas customers. Exolon appeared on a compilation called Four Smash Hits From Hewson which is better value for money. Have a look through the adverts – M.J.C. Supplies should be able to help.

Silicon disc feedback

IN response to your request in the October issue for feedback on the suitability of the dk'Tronics silicon disc, you may be interested in the following benchmark tests which I carried out.

All tests were run on a CPC6128 fitted with a standard 3in second disc drive as drive B, and an expanded 444k silicon disc as drive C. The operating system used was CP/M Plus, and all times are shown as minutes:seconds.

The first test involves the compilation of a CBasic program consisting of 21 separate disc files, with a total source file length of 2,454 lines.

Compiler	Source files	Work files	Relocatable	Time
A:	B:	B:	A:	6:50
A:	B:	C:	C:	5:06
A:	C:	C:	C:	3:35

As you can see, the timing is almost halved when the silicon disc is used for all disc operations.

The second test, using Protext, consisted of the following steps:

- *Load a 77k document which, owing to its size, needs to be buffered on to disc.*
- *Replace 1,144 full stops with commas.*
- *Skip from start to end of document, and back again.*

For the first part of the test Protext was configured to place both text and temporary file on drive B. This was changed to drive C for the second part.

Files	Load	Replace	Skip to end	Skip to start
B:	0:04	1:59	1:32	0:20
C:	0:19	0:54	0:29	0:05

The most interesting result is the extended load time when using drive C. Protext loads the entire document into the temporary file when using the silicon disc, however the temporary file is added to as editing continues when using the standard 3in drive.

Finally, with Supercalc2 I carried out the following with a 6K spreadsheet:

- *Load program.*
- *Load spreadsheet.*
- *Save spreadsheet.*

Program/ files	Load program	Save file	Load file
B:	0:14	0:06	0:21
C	0:05	0:02	0:10

The silicon disc obviously performs well under disc-intensive processes, and I chose it instead of a 5.25in drive because of the dramatic reduction in program compilation times.

New users must consider the cost and relatively low capacity of the drive against the high throughput rate. It is also important to remember that the drive must be loaded with any required software, and that all files must be saved to a standard disc before switching off.

A submit file can be created to copy all required programs/files to the silicon disc as follows:

```
PIP
<B:=A:PIP.COM[VW]
<B:=A:D.COM[VW]
<
B:
D
```

This file will copy the the programs PIP and D to the disc, set drive B as the current drive, and execute program D.

To modify the search drive path under CP/M Plus, include the following in the profile.sub file:

```
SETDEF B:,A\: [TEMPORARY=B:
```

I hope this information will be of use to other readers. – **J. Kershaw, Leicester**

SCREENVISION
TURNS YOUR MONITOR INTO A COLOUR TV!

AT THE AMAZING OFFER PRICE OF £64.95 INC VAT
Door to Door Insured delivery add £6

USE YOUR AMSTRAD CPC464, CPC664 & CPC6128 MONITOR AS A COLOUR TV SET!

Screenvision is a modern 'State-of-the-Art' TV Tuner which simply connects to your monitor, using the existing lead and converts it to an outstanding colour television.
Screenvision has more features than any other TV Tuner and costs less! Each tuner has seven pre-select push button channel selectors, separate controls for brightness, colour, tone and volume and has built in Speaker, Colour and Automatic gain control.
Unlike other products, Screenvision also connects to a host of other Monitors should you change your system.

DEALER & EXPORT ENQUIRIES WELCOME

SCREENS *MICROCOMPUTERS & ELECTRONICS LTD.*
MAIN AVENUE · MOOR PARK · NORTHWOOD · MIDDLESEX · ENGLAND
TEL: 09274 20664 · TELEX: 929224 SCREEN G · FAX: 0923 835421

MICROGENIC SYSTEMS

NEW ADVANCED EPROM PROGRAMMER – £69.95

- ★ Put your own programs into Eprom
- ★ Easy to use menu driven software supplied in Eprom
- ★ Fitted with Zif socket – no bent legs here!
- ★ Programs 2764, 27C64, 27128, 27C128 Eproms
- ★ Automatic Eprom blank check and verify
- ★ Put several programs into one Eprom
- ★ Tape to Eprom, Eprom to Eprom etc.
- ★ Normal and fast programming algorighms

ADVANCED EPROM EXPANSION BOARD – £29.95

- ★ Holds 8 Eproms 0-7 018-15
- ★ Disable switch with LED to allow all normal programs to be run without disconnecting your Eprom expansion board

Both boards feature vertical PCB's for easy access and use, with flow through connectors and hardware reset buttons

- ■ Eprom Eraser £22.50
  With Timer £27.50
- ■ Blank Eproms 27C64 ..... £5.95 each
  27C128 ..... £6.95 each
- ■ Eprom Erasure and Testing Service ..... £1.25 each
- ■ Special Eprom Labels ..... £1.00 per sheet of 48
- ■ Anti Static Eprom Storage Boxes ..... £2.50 each

ALL MICROGENIC PRODUCTS ARE OF THE HIGHEST QUALITY AND ARE FULLY TESTED

MICROGENIC SYSTEMS
P.O. Box 41, Wath-on-Dearne
Rotherham, South Yorkshire S63 7PS

CPC COMPUTING MAIL ORDER OFFERS

SAVE £10

Cut out the dazzle with these anti-glare filters

These unique filters incorporate a specially designed micro-mesh system which lets most of the light from your VDU get through, but blocks out unwanted reflections and limits the amount of glare.

With the filter in place you'll notice a marked difference in the quality of your display. Characters become clearer and easier to read, while graphics really stand out.

So give your eyes a rest from fuzzy displays and get the maximum effect from your monitor by ordering your screen filter NOW!

RRP £19.95 **Our price £9.95**

To order your filter, please use the form on Page 53

The Pro's Choice

Competition PRO 5000

Arcade quality joystick fitted with super sensitive microswitches for the ultimate in joystick control.
Features include dual fire buttons for left or right hand operation; firm base pads for non-slip control and a robust steel shaft with rubber return for a smoother operation.

£14.95*

Competition PRO 5000 CLEAR

Arcade quality joystick with all features of the Competition Pro 5000 but with an exciting clear case.
SCORE LIKE A PRO!

£15.95

Competition PRO EXTRA

A brand new fully micro-switched arcade quality joystick. Features include RAPID FIRE; UNIQUE SLOW MOTION; dual fire buttons; firm base pads, for non-slip control and a robust steel shaft with rubber return for a smoother operation.

£16.49

The Competition Pro range of joysticks carry a two year guarantee.
The Competition Pro 5000 and Pro Extra are suitable for use with the following computers:
Amstrad/Schneider (certain models require an interface for Rapid Fire Slow Motion features) ; ZX Spectrum (when used with an interface); MSX computers; Atari ST; Commodore 64; VIC 20 and Amiga

Amstrad; ZX Spectrum; Atari; and Commodore are trade marks respectively of: Amstrad Consumer Electronics p.l.c., Atari International, Commodore International Ltd.

DYNAMICS marketing Ltd

✱ Available from Boots, Argus and all good computer retailers.

NEW COIN STREET ROYTON OLDHAM OL2 6JZ ENGLAND
TELEPHONE: 061 626 7222 TELEX: 669705 COING

PHG PILGRIM HOUSE GROUP

THE FOLLOW UP TO FOOTBALL DIRECTOR

FD II

WARNING ONLY FOR THE SPECTRUM 128k, +2 AND +3, ATARI ST, AMIGA, IBM PC, AMSTRAD DISK

FOOTBALL DIRECTOR 2 IS 170K OF PURE STRATEGY.
4 X THE SIZE OF A NORMAL 48K GAME

DISC OR TAPE **£19.99**

AVAILABLE FROM ALL LEADING RETAILERS

F E A T U R E S I N C L U D E

TRANSFER REQUESTS
2-3 POINTS FOR A WIN
SEE ALL CUP ROUNDS
NON LEAGUES
CUP FIXTURE LIST
3 SCOUTS / EXTRA TIME
7 YOUTH PLAYERS
CONTRACT LENGTH
WAGES P/W
SIGNING ON FEE'S
CHANGE CLUB
PLAYERS AGES
★GOALSCORERS / LEAGUE
CHANGE PLAYERS POS
EUROPEAN OFFERS
★BONUS PAY
★INSURANCE / FORMATION
BUILD STANDS
ALTER TICKET PRICES

ATTENDANCE
TEAM SHIRTS
LOAN PLAYERS
TRANSFER LIST
CLUB LOTTERY
POLICE BILLS
DIRECTORS
★TAX REBATE
SEE ALL FOUR DIV'S
★HISTORY PAGE
REPAY BANK
TEAM MORAL
SACK PLAYERS
SEE POSTPONEMENTS
MANAGER OF THE MONTH
POOLS PANEL
VAT RETURNS
VOTE OF CONFIDENCE
INJURY TIME

STAFF RETIREMENT
FOUR LEAGUES
20 TEAMS EACH
38 GAME SEASON
HOME & AWAY
FA / LEAGUE CUPS
REPLAYS / INJURIES
EUROPEAN CUP
U.E.F.A. CUP
CUP WINNERS CUP
2 LEGS / PENALTIES
AGREGGATE / PLAYERS
MORAL / SKILL
FIELD POSITION
SCORED / CONCEDED
PLAYED / COACH
PHYSIO / 3 LEVELS
FIXTURE LIST
P.W.L.D.F.A. PTS

★EXTRA TRAINING
SUBSTITUTIONS
SENDING OFFS
MIDWEEK GAMES
FREE TRANSFERS
SELL & BUY SHARES
RETIREMENTS
INTERNATIONALS
EURO TOURS
MANAGER RATING
★PRINTER OPTION
8 RESERVES
PROMOTION
RELEGATION
WEEKLY NEWS
BORROWING
MORTGAGE
SAVE GAME
INTEREST / TAX

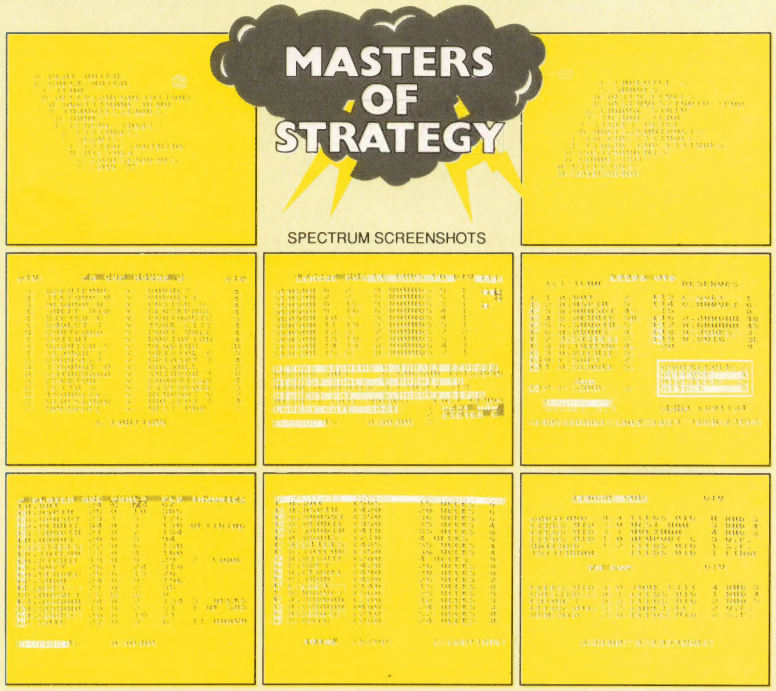
SPONSOR / SACKINGS
FULL RESULTS
SEASON TICKETS
★T.V. CAMERAS
CROWD VIOLENCE
APPROACHES
TESTIMONIALS
WEEKS PROFITS
NAME / TEAM EDITOR
L.M.T.G. COUNTER
LEAGUE TITLES

+ MUCH MORE

★ FEATURES NOT ON THE +2 (TAPE)

MASTERS OF STRATEGY

SPECTRUM SCREENSHOTS



TO OBTAIN A FREE CATALOGUE OF ALL OUR STRATEGY GAMES JUST ENCLOSE A LARGE S.A.E.

OTHER GAMES STILL AVAILABLE BY MAIL ORDER

FOOTBALL DIRECTOR(48K)	▭	⬭	▯	△			£9.99
WEMBLEY GREYHOUNDS	▭	⬭					£7.99
INTERNATIONAL MANAGER	▭	⬭		△	▽		£7.99
2 PLAYER SUPER LEAGUE	▭	⬭					£7.99
RECORDS FILE	▭	⬭	▯				£3.99

SPECTRUM 48K ▭ SPECTRUM 128K ⬭ COMMODORE 64 ▯
AMSTRAD CPC 464 △ AMSTRAD CPC 6128 ▽

PLAYING TIPS FOR ALL OUR GAMES £1.00

Cheque/P.O. made out to D & H Games plus a large S.A.E. with 25p stamp attached. Please state clearly which game or games you require & for which computer. Also write your name & address on the reverse side of any cheques. Overseas orders please include £1.50 Postage & Packaging.

D&H GAMES

DEPT CA, 19 Melne Road, Stevenage, Herts SG2 8LL ENGLAND
☎ (0438) 728042

CONTACT: MANAGING DIRECTOR MR J. DE SALIS

NEW LOW PRICE ST!

ONLY FROM SILICA

Finally, there's a personal computer that not only solves problems like other computers, but also solves the one problem that other computers have created. Affordability. Silica Shop are pleased to present the ST range of personal/business computers from Atari. The ST was designed utilizing the most recent breakthroughs in semiconductor technology, producing a personal computer that performs tasks with fewer parts. Which means it costs less to make. And less to buy. The latest ST computers now include built in power supplies and built in disk drives. The TOS operating system and GEM window environment are now on ROM chips which are already installed in the ST keyboard. This enables automatic instant booting when you switch on. Silica Shop are pleased to offer the complete Atari ST range. Our mail order department is situated in Sidcup and we have 3 retail outlets at Sidcup, Lion House (Tottenham Court Rd) and Selfridges (Oxford Street). We have eight years experience of Atari products, longer than any other UK company, and are well established as the UK's No.1 Atari specialist. With a group turnover of over £9 million and in excess of 80 staff, we offer you unbeatable service and support. We provide several facilities which you will find invaluable during your Atari computing life and most of these facilities are available **ONLY FROM SILICA**. We suggest that you read through what we have to offer, before you decide where to purchase your Atari ST.

FREE STARTER KIT - Only From Silica

When you purchase any Atari ST keyboard, you will not only receive the best value for money computer on the market, but you will also receive the following from Atari Corporation as part of the package:
** BASIC Language Disk * BASIC Manual * ST Owners Manual * TOS/GEM on ROM*
If you buy your ST from Silica Shop, you will also receive:
** NEOchrome Sampler - colour graphics program * 1st Word - Word Processor*
In addition, we at Silica would like to see you get off to a flying start with your new computer, so we have put together a special **ST STARTER KIT** worth over £100, which we are giving away **FREE OF CHARGE** with every ST computer purchased at our normal retail prices. This kit is available **ONLY FROM SILICA** and is aimed at providing users with a valuable introduction to the world of computing. We are continually upgrading the ST Starter Kit, which contains public domain and other licensed software, as well as books, magazines and accessories all relevant to ST computing. Return the coupon below for full details.

DEDICATED SERVICING - Only From Silica

At Silica Shop, we have a dedicated service department of seven full time Atari trained technical staff. This team is totally dedicated to servicing Atari computer products. Their accumulated knowledge, skill and experience makes them second to none in their field. You can be sure that any work carried out by them is of the highest standard. A standard of servicing which we believe you will find **ONLY FROM SILICA**. In addition to providing full servicing facilities for Atari ST computers (both in and out of warranty), our team is also able to offer memory and modulator upgrades to ST computers.

1Mb RAM UPGRADE: Our upgrade on the standard Atari 520ST-M or 520ST-FM keyboard will increase the memory from 512K to a massive 1024K. It has a full 1 year warranty and is available from Silica at an additional retail price of only £86.96 (+VAT = £100).

TV MODULATOR UPGRADE: Silica can upgrade the 1040ST-F to include a TV modulator so that you can then use it with your TV set. This is an internal upgrade and does not involve any untidy external boxes. A cable to connect your ST to any domestic TV is included in the price of the upgrade which is only £49 (inc VAT). The upgrade is also available for early 520ST computers at the same price.

THE FULL STOCK RANGE - Only From Silica

We aim to keep stocks of all Atari related products and our warehouse carries a stock of over £½ million. We import many software titles direct from the USA and you will find that we have new releases in advance of many of our competitors. Unlike dealers who may only stock selected titles, we have the full range. In addition, we carry a complete line of all books which have been written about the Atari ST. A range as wide as ours is something you will find is available **ONLY FROM SILICA.**

AFTER SALES SUPPORT - Only From Silica

Rest assured that when you buy your ST from Silica Shop, you will be fully supported. Our free mailings give news of releases and developments. This will help to keep you up to date with new software releases as well as what's happening in the Atari market. And in addition, our sales staff are at the end of a telephone line to service all of your Atari requirements. If you purchase an ST from Silica and would like any technical advice, we have a full time technical support team to help you get the best from your computer. Because we have both the staff and the systems specifically dedicated to providing after sales service on Atari ST computers, we are confident that our users enjoy an exceptionally high level of support. This can be received **ONLY FROM SILICA**.

FREE CATALOGUES - Only From Silica

At Silica Shop, we recognise that serious users require an in-depth information service, which is why we mail free newsletters and price lists to our ST owners. These are up to 48 pages long and are crammed with technical details as well as special offers and product descriptions. If you have already purchased an ST and would like to have your name added to our mailing list, please complete the coupon & return it to us. This information service is available **ONLY FROM SILICA**.

FREE OVERNIGHT DELIVERY - From Silica

Most orders are processed through our computer within 24 hours of receiving them. Most hardware orders are sent by the overnight GROUP 4 courier service FREE OF CHARGE to customers within the UK. This method helps to ensure minimum delay and maximum protection.

PRICE MATCH - Only From Silica

We hope that the combination of our low prices, FREE UK delivery service, FREE Starter Kit and FREE after sales support, will be enough to make you buy your Atari equipment from Silica Shop. If however, there is something you wish to purchase, and you find one of our competitors offering it at a lower price, then please contact our sales department, providing us with our competitor's name, address and telephone number. If our competitor has the goods in stock, we will normally match the offer (on a 'same product - same price' basis) and still provide you with our normal free delivery. We realise that we are not the only company who will match a competitor's price. However, if you come to us for a price match, you will also be entitled to our after sales service, including free newsletters and technical support. This makes our price match promise rather special, something you will receive **ONLY FROM SILICA**. We don't want you to go anywhere else for your Atari products. So shop at Silica, the UK's No1 Atari Specialist.

SIDCUP (& Mail Order) **01-309 1111**
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

LONDON **01-580 4839**
Lion House (1st floor), 227 Tottenham Court Rd, London, W1P OHX

LONDON ..... **01-629 1234 ext 3914**
Selfridges (1st floor), Oxford Street, London, W1A 1AB

£260 +VAT=£299

SO MUCH FOR SO LITTLE!

There is nothing that can compare with the incredible value for money offered by Atari's 520ST-FM. For only £260 (+VAT=£299), you can purchase a powerful 512K RAM computer, with a 95 key keyboard (including numeric keypad), MIDI interface, GEM, a palette of 512 colours, mouse controller, and a 512K built-in disk drive. The 520ST-FM has a TV modulator built-in, and comes with a lead to allow you to plug it straight into any domestic colour television set. The mains transformer is also built-in to the keyboard, so there are no messy external boxes. You couldn't wish for a more compact, powerful and stylish unit. Atari ST computers are now firmly established in the UK, there are nearly 500 software titles already available for a wide variety of applications and the list is growing all the time. And that's not all. When you buy your new 520ST-FM (or any Atari ST computer) from Silica Shop, you will get a lot more, including a FREE Silica ST Starter Kit worth over £100. Read the ONLY FROM SILICA section on the left, to see why you should buy your new high power, low price 520ST-FM from Silica Shop, the UK's No1 Atari Specialists. For further details of the range of Atari ST computers and the FREE Silica ST Starter Kit, complete and return the reply coupon below.

ATARI 520ST-FM NOW ONLY £260 (+VAT=£299)
520ST-FM with 512K RAM & mono monitor £399 (inc VAT) **Upgrade from 512K RAM to 1024K RAM £100** (inc VAT)

ATARI 1040ST-F - NEW PRICE

We are pleased to announce a new reduced price point on the 1040ST-F which is now available for only £499 (inc VAT). The 1040 is a powerful computer with 1Mb of RAM and also includes a built-in 1Mb double sided 3½" disk drive. The 1040 has been designed for use on business and professional applications most of which require a high resolution monochrome or colour monitor. It does not therefore have an RF modulator for use with a domestic TV set. Modulators can be fitted for £49 (inc VAT).

1040ST-F Keyboard Without Monitor	*£499 (inc VAT)*
1040ST-F Keyboard + High Res SM125 Mono Monitor	*£599 (inc VAT)*

If you would like further details of the 1040ST-F, return the coupon below.

MEGA ST's NOW IN STOCK

For the user who requires even more RAM than the 520 or 1040 ST's offer, the new MEGA ST computers are now available. There are two MEGA ST's, one with 2Mb of RAM and the other with a massive 4Mb. Both new computers are fully compatible with existing ST's and run currently available ST software. The MEGA ST's are styled as an expandable Central Processing Unit with open architecture and a detachable keyboard. They are supplied with GEM, a free mouse controller and all extras as with the 520 or 1040. Prices are as follows:

MEGA ST 2Mb Keyboard + CPU	*£899 (inc VAT)*
MEGA ST 2Mb Keyboard + CPU + SM125 Mono Monitor	*£999 (inc VAT)*
MEGA ST 4Mb Keyboard + CPU	*£1199 (inc VAT)*
MEGA ST 4Mb Keyboard + CPU + SM125 Mono Monitor	*£1299 (inc VAT)*

If you would like further details of the MEGA ST's, return the coupon below.

ATARI ST

To: Silica Shop Ltd, Dept COMAS 1288, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

PLEASE SEND ME FREE LITERATURE ON THE ATARI ST

Mr/Mrs/Ms: ..... **Initials:** ..... **Surname:** .....

Address: .....

.....

.....

..... **Postcode:** .....

Do you already own a computer
If so, which one do you own? .....

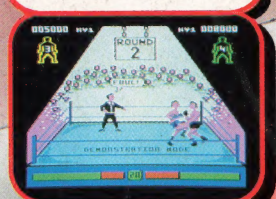
BY FAIR MEANS OR FOUL

PRIZE COMPETITION
Can you become The World Champion?

AMSTRAD CPC

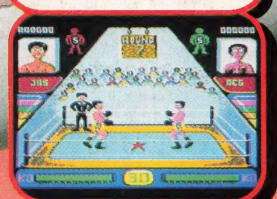
A Fair Punch

BBC MICRO



The Ref Sees a Foul Move

COMMODORE 64



Opponents Facing Up

SPECTRUM

A Foul Move

BECOME THE WORLD CHAMPION — BY FAIR MEANS OR FOUL

A realistic boxing simulation. You can even cheat... if the ref's not looking!

You're behind on points and time is running out. The ref looks half asleep. A quick head butt and a sly punch below the belt and your opponent is toppling over. But as he falls, his knee strikes you a paralysing blow. "Foul" shouts the crowd, and your opponent is disqualified.

You've won, but in the next championship contest you meet a boxer who knows more dirty tricks than you. It needs skill and cunning, lightning responses and deadly strategy. Have you got what it takes to become the World Champion — By Fair Means or Foul?

FAIR AND FOUL MOVES

Fair Moves	Head Punch Body Blow Upper Cut Duck Punch	Foul Moves	Head Butt Knee Groin Punch Kick

COMMODORE 64/128 ● SPECTRUM ● AMSTRAD CPC 464/664/6128
BBC MICRO B/B+/MASTER/MASTER COMPACT ● ACORN ELECTRON

Cassette:	£7.95	Spectrum
Cassette:	£9.95	C64, Amstrad, BBC, Electron
5¼" Disc:	£11.95	C64, BBC
3½" Disc:	£12.95	Spectrum
3½" Disc:	£14.95	Amstrad, BBC Master Compact

SUPERIOR SOFTWARE Limited

Alligata

Dept. BF13, Regent House, Skinner Lane, Leeds LS7 1AX. Telephone: (0532) 459453.

Please make all cheques payable to "Superior Software Ltd."

Access VISA

24 HOUR TELEPHONE ANSWERING SERVICE FOR ORDERS

OUR GUARANTEE

- All mail orders are despatched within 24 hours by first-class post.
- Postage and packing is free.
- Faulty cassettes and discs will be replaced immediately.

(This does not affect your statutory rights)